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THE UNIVERSITY OF ALBERTA

"Maladaptive Behaviors:
A Predictive and Follow-up Study"

by

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A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF DOCTOR OF PHILOSOPHY

DEPARTMENT of EDUCATIONAL PSYCHOLOGY

EDMONTON, ALBERTA

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THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled "Maladaptive Behaviors: A Predictive and Follow-up Study" submitted by Dennis Leslie Brammer in partial fulfilment of the requirements for the degree of Doctor of Philosophy.

John McLeish
Supervisor

External Examiner

Date 22nd June 76

DEDICATION

To David Davies and Keir Pearson who talked me into starting.

To Len Stewin and my committee for their suggestions.

To Roy Brown who, as external examiner, drove all the way to Edmonton and back in a storm and was still pleasant and helpful.

To Cheryl who typed through the night - she was marvellous.

To John McCleish a very special thank you - if it had not been for his support, confidence, valuable advice, his learning, and his goading, then I should not have finished. He made it into a special learning experience for me.

ABSTRACT

One hundred and fifty one Grade three subjects were put through Bower's "Process for In-School Screening of Emotionally Handicapped Pupils" and thirteen boys and seven girls were 'screened-out' as being 'at-risk' as adaptive failutes, using a score of one or more standard deviations above the mean on at least two instruments as the criterion. This represents 16.46% of the boys, 9.72% of the girls, and an overall figure of 13.25%.

Test-retest reliability coefficients and reliability indices suggested that each of the three instruments was sufficiently reliable to warrent further investigation.

The fivefold problem of the thesis upon investigation, indicated that the Process for the In-School Screening of Children with Emotional Handicaps did, in general, reliably and validly screen-out children whose behavior is maladaptive. Two definite types of maladaption were noted from the Bower instruments, and those children considered 'at-risk' in 1972 were still 'at-risk' in 1975; there were also significant epidemiological differences between these children and those who were not screened-out, differences significant enough to allow for five distinct clusterings or classifications.

What is needed is a diagnostic technique which not only indicates whether or not the child's behavior is maladaptive, but also indicates very clearly what specific behaviors are a source of concern and need to be altered if the pupil is to adjust to the school situation. Such a technique would do more than classify, it would indicate, at least, areas for remediation and also, ideally, appropriate techniques for remediation. Since behavior cannot be deemed morbid, or maladaptive, without some knowledge of its frequency, intensity, duration, and association with other forms of behavior, and the setting in which it occurs, an instrument like that of Bower would not be suitable.

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CHAPTER ONE

BACKGROUND TO THE PROBLEM

> Even the most tempermentally well-suited child experiences some conflict between the urges he feels and the psycho-social demands he perceives: accordingly, he experiences some stress (Glidewell, 1971, p. 736).

The study of behavioral responses of certain children to "urges" and "demands" has been attempted many times. Unfortunately the majority of the studies have suffered from a lack of credibility in several respects, not the least of which has been nomenclature. Terms like emotional disturbance, adjustment reaction, emotional handicap, maladjustment, have all been used to designate a particular group but, even when the terms have been defined, they have been done so in so loose a fashion that comparisons from one study to another are difficult. Incidence studies, of whatever it is that was being measured, are, in many cases, as fraught with problems: in some studies the incidence of abnormal conditions or behaviors is such as to suggest that a child is more likely to be 'normal' by having the 'malady' than by not having it. Teachers, clinicians, parents, nurses, children... all at some time have been asked to make their judgements in the hope that they can indicate how many children are having personal or interpersonal difficulties. Generally, even when such children have been identified, however speciously, nothing is done for them. In particular cases treatment may be instituted on the premise that it is needed. However it appears to be more often the rule that 'treatment' is recommended on the assumption that it is both suitable and available, when in fact it is neither available nor appropriate.

A growing dissatisfaction with the present medical model of "mental illness" is causing more and more psychological troubles to be looked at in terms of 'adaptive failure', that is, poorly learned or faulty patterns of coping with the problems of everyday living. One of the most common ways of thinking about the problem is by considering the conflicts and stresses to which one is exposed in one's formative years, and how healthy modes of adaptation are impeded (Lazarus, 1966). An alternative view could be based on Social Learning, with the terms like 'emotional disturbance' being dropped and behavior looked at in terms of adaptation, particularly since the value of most behavior consists in the establishment of more favorable relationships for the organism with the environment. This view has recently been endorsed by Stott (1975) who feels that if a behavior fails to yield an advantage to the organism, or results in a worsening of the "organism-environment relationships", then the behavior is maladaptive as far as the individual is concerned (ibid, p. 7).

It is maladaptive behavior, in this sense, of adaptive failure, which therefore will be the main concern of this thesis.

A Model of Social Learning and Adaptive Failure

One such model is proposed by the behaviorists who have attempted to free themselves, and their science, from the subjective approach to mental phenomena. The main tenet of radical behaviorism is that an organism behaves as it does as a functional response to the changing environment, and in terms of its own structure. This is determined by genetic and environmental histories through the operation of a complex and dynamic series of contingencies of reinforcement. The changing environment leads to changes in behavior associated, presumably, with a restructuring of the inner 'experience' of the organism. Each element in the environment has aspects to which the child responds and which reinforce him, either positively or negatively. Contingencies of reinforcement operate in the ontogenetic history to select behaviors in the individual repertories at any point in time. These contingencies, which affect each organism, are not "stored" inside them, but are constantly being changed by educational and other 'shaping' processes (Skinner, 1975).

Since it is posited that these contingencies control behavior, it is clear that they are of prime importance. A knowledge of the variety and consistency of aversive and positive reinforcement of social responses, for example in the classroom, is therefore imperative to an understanding of other social behaviors. This is the case especially in terms of adaptation, but to date little attention has been given to the possible learning situations which are instrumental in producing maladaptive behaviors (Sawrey and Telford, 1964).

The most logical way to detect maladaptive behaviors amongst school children would seem to be to ask the teachers who know them (White and Harris, 1961, p. 164). Over the years teachers have been asked many things: very rarely are they asked the same thing more than once by the researchers. Usually they are asked for their judgements about rather ill-defined pieces of behavior and a certain child's proclivity for that behavior but no particular behavioral context is given (Stott is one of the few exceptions here). Usually the teacher has to decide for himself whether a child is 'under stress' or is 'anxious' and so on, without these terms being defined. There is little wonder that, with differing methodologies, terms, and populations few if any of these teacher-centered studies are directly comparable.

Epstein (1941) found considerable variation in teachers' judgment of pupils --- one pupil might be a problem to one teacher but not to the other five teachers with whom he has contact. This is still probably a common experience: it should be borne in mind when pupils are appraised by teachers. It would seem, nonetheless, that the teacher's opinion is worth seeking but it would also be sensible to collect as many opinions of a pupil's adjustment as possible before reaching any conclusions.

The Incidence of Adaptive Failure

The difficulty of defining accurately what constitutes "emotional disturbance," what is a sign of transitory disequilibrium, and what is indicative of a serious disturbance, makes any estimation of the number of children who are failing to adapt hazardous.

> Until long-term follow-up studies of the emotional development of unselected samples of children from birth to maturity have been made, and until we are more fully aware of the outcome of apparent anomalies of behavior or personality occuring at any age, we can only proceed empirically... (Ward, 1955).

Such evidence as there is indicates that 'emotional disturbance', and states of developmental difficulty, are more common in children than is generally supposed.

One of the first major studies made in the area was that of Burt (in Ward, 1955). He used a case study methodology with 391 pupils aged between seven and thirteen, which elicited a wealth of criticism. It was hard to accept his findings that 35.4% of the general school population might be in need of specialized help. Wickman (1928), did nothing to relieve the anxiety when his results showed 42% might be in need of treatment. At about the same time, Hildreth (1928), surveyed an entire school population.

She showed that seven to eight per cent of the children were problem cases, but unlike Burt and Wickman, she did not differentiate between mild and severe cases. McFie (1934), in another criticized study, found a higher incidence than even Burt had found, 46%. However, like Hildreth, he too did not differentiate between degrees of disturbance or even what was meant by the word. Soon afterwards, using a methodology similar to that of McFie, Milner (1938), had a drastically reduced incidence of 17%. His figures however are not strictly comparable since his population consisted only of girls; in addition they were from an economically superior group and from selected schools which had a progressive educational outlook.

The next major study was that of Rogers (1940): his figures showed that 12% of the sample had severe problems whilst a further 30% were mildly disturbed. It is interesting to note the variations in the incidence of adjustment problems which Rogers found from school to school, due possibly to differences in educational policies. By his criteria, the fifth grade in all of the schools he sampled were the most disturbed. This finding may be related to developmental factors.

Mangus' (1948) rural Ohio study data do not seem comparable to those of Rogers. Some 19% of his population were "poorly adjusted" but he does not differentiate between the levels. As in most of the other studies, Mangus found that two to three times as many boys as girls evinced problems. He also found "... a close relationship between personality adjustment and childrens' success or failure in school (ibid, p. 13)".

Studies from New Zealand (1948/9) and France (1950) found 7.6% and 24.7% respectively of their populations were "disturbed"; the former figures indicate serious problems, the latter do not differentiate.

Ullman (1952) found that 30% of children were "disturbed", eight per cent of them seriously: he concluded however that "... the picture of 'maladjustment' is a function of the instrument used to measure it (Ullman, p. 40)". He also found that boys outnumbered girls four to one.

One of the more recent and comprehensive studies is that of Bower (1971). He identified four per cent of the pupils in the 4th, 5th, and 6th grades in selected California schools as being "seriously disturbed". The possibility of contamination in his earlier study has been raised by White and Harris (1961), but this would not seem to be matter for concern.

In nearly all of the studies cited, "emotional disturbance" is defined in terms of the characteristics of the children selected and the figures differ so widely as to be hardly comparable. Thus, by a circuitous route, one returns to the beginning: "emotional disturbance" is a relative thing. The only point of consistency in the studies is that boys tend to have a higher incidence of whatever is being measured by the instruments, than do girls. Table 1 shows how great the variability is: it is as great as the criteria used in selection, and the areas from which the children were selected.

Since hospital incidence figures are also a reflection of the type of instrument used, the number of personnel available, the latest admission policies and the societal attitudes current at the time, little comparison can be made between those studies either. It must also be kept in mind that what constituted maladaptive behavior in the days of Burt or Wickman may be quite different from that which one now thinks of as maladaptive.

Particularly over the last fifteen years there has been a swing away form studies of 'emotional disturbance' to a study of actual behavior. Except by Stott, little attention has been devoted to behavior in context. But at least some of the studies allow a picture of a child to be drawn, be it a subjective one; behavior can then be looked at in terms of adaptation.

A classic study of actual behavior was that of Olson (1929). Over 600 children in Grades one to eight were observed for ten-minute periods while the frequencies of various nervous habits were recorded. The time-study technique yielded data of known characteristics, as compared to relying upon the recall of informants. Olson reported no relation between the number of nervous habits and age and he found that girls showed significantly more

TABLE 1

COMPARATIVE TABLE OF ESTIMATED INCIDENCE OF EMOTIONAL DISTURBANCE

Investigator	Source of Information	Sample	Age	Disturbance		
				Mild		Serious
Burt (U.K.)	Case Study	391	7-13	31.4%		4%
McFie (U.K.)	Teachers	697	6-12	--	46%	--
Milner	Teachers (girls' schools)	1201	10-16	--	17%	--
Rutter (U.K.)	Behavior Rating	286	7-13	--		7.3%
Wickman (U.S.A.)	Teachers	870	6-12	42%		7%
Hildreth (U.S.A.)	School personnel	2000	6-18	--	7-8%	--
Rogers (U.S.A.)	Various indices inc. teachers	1524	6-12	30%		12%
Mangus (U.S.A.)	Weighted indices, teachers, etc.	1500	8&10	--	19%	--

Ullman (U.S.A.)	Teachers	801	14	--		8%
Bower (U.S.A.)	School specialists	5500	9-11	--		4%
Maes (U.S.A.)	Bower's Instruments	600	9-11	--		4%
New Zealand Educ. Institute	Teachers and Psychologists	2363	5-14	--		7.6%
Heuyer (france)	Teachers	95,237	6-13	--	24.7%	--

nervous habits. Although his study suffers from only looking at behavior already prejudged to be abnormal, it is of major interest. However, it was Moreno (1934), Jennings (1937), Bonney (1943), and Lippitt (1959), who, as trained observers, demonstrated how important the classroom is as a social system. They have shown that, in general, most children hold an accurate perception of the classroom social structure, and of their position within it. Finding, or being assigned a position within that sociometric structure is associated with the process of learning the alternative modes of behavior available, as well as the consequences of adopting each mode. Whether or not a child survives the process would seem to be a matter of adaptation, as would his capacity to deal with the dynamics of the teacher--classroom relationship.

An understnading of the child naturally requires more than a cataloging of his behaviors and noting the child's friends. It also requires an analysis of the ways in which he responds to the changing features of his social environment. "It is an inability to carry on successful commerce within a variable environment that marks all cases of adaptive failure (Lazarus, 1974, p. 506)".

To look at such adaptive failures it would seem that clinical assessments need to be based on a scientific approach to both description and to both short term and long term prediction. Then, as diagnostic techniques become more refined, it should become increasingly possible to say that given a set of particular circumstances (e.g. this, that or the other treatment), the child will be expected to react in a specific way.

The Multivariable Approach

There appear to be two main ways of describing children. The first consists of using a classificatory approach, with the allocation of children to mutually exclusive categories. The second consists of a dimensional model where the dimensions consists of a number of symptoms (or behaviors) which can be counted. Some researchers claim that such quantification provides a measure of the intensity of the disorder (Quay, 1972). In general however, multivariate analyses of problem behavior have resulted in very few dimensions. Himmelweit's (1953) analysis of Ackerson's (1942) three thousand cases yielded only two factors both of which have been substantiated in other studies (Table 2). This seems surprising, since one would expect that analyses of data from research using different methods, or different sets of behavioral items, collected with different techniques on different populations, would lead to an explanation in terms of different factors, components, or dimensions.

TABLE 2

PRINCIPAL COMPONENTS OR FACTORS DERIVED FROM MULTIVARIATE APPROACHES TO BEHAVIOR DISORDERS

Research Worker	Component I	Component II
Hewitt & Jenkins, 1946	Overinhibited/ Neurotic	Unsocialized/ Aggressive
Himmelweit, 1953	Withdrawal	Conduct
Peterson, 1961	Personality	Conduct
Quay, 1964	Disturbed/ Neurotic	Unsocialized Psychopathic
Jenkins, 1966	Inhibited	Aggressive
Wolff, 1967	Anxiety/ Anti-Social	Aggressive Acting-Out
Conners, 1970	Anxious/ Inhibited	Aggressive/ Conduct

Kelvin (1975) suggests that the two major factors seem to be broadly similar in such studies. Factor I seems to be related to inferiority, shyness and withdrawal, whilst factor II tends to be related to aggressiveness, acting-out, lying and the like. A third pattern has also emerged in some researches (Quay and Quay, 1965, Patterson, 1964). Labelled 'inadequacy-immaturity,' it appears to be characterized by short attention span, lack of interest, and day dreaming.

One of the best known works in Canada (Pimm, Quay, Werry, 1967), conducted under the auspices of the Ottawa Public School Board, used a checklist devised by Pimm and McClure in 1966, of one hundred observable behaviors all derived from teacher's descriptions of maladaptive classroom behaviors. Amongst the 827 children in the sample the study found the same three factors that Quay had found with the preadolescent delinquents, plus a fourth factor -- 'over-active symptomatology' (interrupts, comments aloud, out-of-seat behavior). There are problems however. Terms descriptive of factors like 'conduct disorder,' are hardly distinguishable from the 'behavior problems' which constituted the original checklist input. Similarly a description ~~such~~ as 'personality problem' is of little use as a diagnostic referent unless it is accompanied by a listing of the salient variables that have consistently appeared on the factor.

Peterson (1965) has offered a convincing argument for simplistic solutions, but Kolvin's et al, (1975) study is fairly typical. This author, as is usual, reduces the complexity of the patterns by saying that some pairs of variables "mean the same". Then he sums the scores on what he calls "similar items" to "provide a better definition of the feature and reduce the small amount of variance within single items (ibid, p. 117)". It is certainly true that the variance taken up by each component can be increased by these procedures, but even then only 34% of the total variance is accounted for. It would seem that the investigators are reducing the importance of the very thing they are looking at (and for), namely the actual behaviors. Like Hewitt and Jenkins, Himmelweit, and Peterson, only about one half of the variables are classified and it makes one wonder why factor analysts have to use a sophisticated technique and then compound it by either looking for names of incompatable components or making chimerical decisions on the association of one variable with another.

Diagnostic Categories for Screening

Since the child's greater responsiveness to both external and internal stimuli makes his behavior less predictable than that of the adult, and more changeable with respect to circumstances, it seems somewhat dangerous to ascribe the manifestation of a certain symptom (behavior) to a specific disorder. Even though a classification like "personality disorder" generally refers to a disorder characterized by limited adaptive flexibility and certain fixed and relatively ineffectual modes of behavior (Ausubel, 1961; Small, Alig and Moore, 1970), the absence of specific criteria or diagnostic symptomatology in a recent study by Liss et al (1973) of psychiatrists' classifications was unexpected, particularly since maladaptive behavior constitutes an important part of these disorders and is more easily measurable than 'emotional disturbance'. They conclude that "there is no systematic classification of symptoms that leads to diagnosis (Liss, 1973, p. 134)."

A rigorous attempt to look at diagnostic categories was completed by Dielman _et al_ in 1969. Eight factors were extracted from a 62 variable behavior problem checklist used with 362 six to eight years olds. The factors were hyperactivity, disciplinary problems, sluggishness, paranoic tendencies, social withdrawal, acting-out, speech problems, and anti-social tendencies. Three second-order factors emerged, two of which resembled those found in earlier studies and were identified as neuroticism, sociopathic behavior and autism.

Although to be commended in many ways, all such diagnostic scales, according to Rutter (1967), have important disadvantages. In particular there is a lack of diagnostic clarity within the overall concept of maladaptive behavior. Instead of using his scales to select diagnostic groups by factor analysis, Rutter uses them to discriminate between already established clinical sub-groups. The two largest clinical diagnostic categories, neurotic disorders and antisocial disorders are pressed into service and, using the psychiatric interview as a discriminator, his scales seem to have good validity, although questions of the actual validity of psychiatric and psychologic interviews, psychiatric classifications, and the possibility of contamination should be raised. The disadvantages lie in the inability of the scale to pick out those children with monosymptomatic disorders, and to differentiate between children with less common disorders of a circumscribed nature, such as anorexia nervosa, conversion hysteria or some obsessional disorders. An earlier study (Rutter and Graham, 1966) suggests that the overlap between disorders perceived by teachers and those perceived by parents is small, but further investigation is warrented.

Instead of considering complex instruments that will both screen and classify children on the basis of symptoms or behaviors, what should be looked at is an instrument which allows for early detection, and treatment, of 'at-risk' children, that is, children whose behavior might be a prodromal sign of adaptive failure. Stott's work (1975) would appear to be important here. Since he has noted that contradictory results are obtained if observers are asked to rate subjects on a scale of general traits or descriptions without stipulating the precise context of the behavior, Stott's Bristol Social Adjustment Guides ask raters to categorize the child's behavior in relation to the specific environment.

In the same vein as Stott, Bower (1963) has stated that if the school is to become an effective preventative force, it must develop ways to identify those children who are in the process of becoming learning and behavioral problems. Only then can the school and community resources be mobilized to help effectively and economically. However, this sort of prevention, although laudable, is hardly the ultimate aim of a profession which regards itself as engaged in a scientific endeavour. Kanner (1972) makes the point that prevention "is practised by maintaining health, not by agitations intended to avert disaster, projected into the future" (p. 245).

The word "help" here can also be considered slightly specious, insofar as it implies that it is both possible and available. The appeal of 'help' and 'prevention' however, could lie in crises in which adaptational failure or success hang in the balance, and where such failures can be identified and favorably influenced at the time they occur.

The Work of Eli Bower

Bower's (1960) early work was with 5500 Californian children in grades four to six. He utilized a teacher rating scale, a self-rating scale and a peer-rating scale on the premise that as many points of view as possible are necessary when assessing a child. Since the instrument screened-out 180 of the 207 children in the sample who had already been assessed as 'emotionally handicapped', the scales were held to have good validity (Bower, 1960).

In 1962, Lambert used a group of school-nominated children, considered by their school psychologists to be 'emotionally handicapped', to validate the instruments of Bower's screening process. She found that the Bower instruments successfully selected nine out of ten of these children as being in need of psychological help (ibid, p. 84).

Lambert has probably done more than anyone to validate Bower's procedures. In 1963, she used clinical teams consisting of psychiatrists, clinical psychologists, and social workers who collectively pooled their various disciplinary skills to decide if certain children were 'emotionally disturbed' or not (Lambert, 1963). All of the children judged were drawn from grades two or five. After the teams had accomplished the task the children were then screened by their teachers, using Bower's instruments. Test-re-test reliabilities varied between .88 and .92. The teachers' judgment correlated with the clinicians' judgment from .36 to .50.

Lambert concluded that teachers often see "problem children" as those whom they have difficulty in managing, or teaching. She believed that teachers often will not refer a child with a problem if they think they know the reason for the child's behavior, e.g. father is an alcoholic (Bower, 1960).

Zax, Cowen et al (1964) successfully used two of Bower's instruments "Thinking About Yourself", and "A Class Play" in a preventative program in the Rochester (N.Y.) schools. The results from the two instruments were correlated with referrals to nurse, I.Q., achievement, absence and a behavior rating scale. "A Class Play" was the most frequently corrleated; only with the variable "Days Absent" was there a nonsignificant relationship.

Maes, in 1966, replicated Bower's original study to see if he could find more efficient predictors. Of approximately 600 pupils, four percent were selected by the instruments. Using a multiple regression method Maes found that the variables most predictive of emotional disturbance were teacher behavior ratings, arithmetic scores, I.Q., and, like Zax, Cowen _et al_, before him, _"A Class Play"_.

Stennett in Minnesota, beginning in 1966, found Bower's instruments to be reliable from year to year. Thirty-eight out of 46 grade four children (83%) were classified as they had been the first time the instruments were administered. This finding seems to impugn those tenets of developmental psychology which suggest that many childhood problems are of a transient nature.

Stennett concluded, a) that about five to ten per cent of children enrolled in elementary school warrent professional attention because of 'emotional handicaps;' b) that a significant number of identified children are not likely to resolve their porblems, tending to fall progressively behind their classmates; c) that the instruments are generally adequate as screening devices.

To date, therefore, the studies show that the instruments are capable of discriminating between children who display signs of adaptive failure and those who do not. Furthermore, these children are screened-out economically (the battery takes a little more than an hour) and enjoyably (it has been reported that the children involved in the studies have been delighted with their novelty). Probably another important aspect of these studies is that the teacher is involved not only in giving the instruments, but in the outcome.

Further support is added by Zax (ibid) and by Maes (ibid) who found the instruments to be rapid screening devices, saving the school psychologist a great deal of time. Normally to screen a child using psychological tests takes at least half a day.

Each of the instruments viz, i) a teacher rating scale -- A Behavior Rating of Pupils, ii) an individual personality questionnaire -- Thinking About Yourself, and iii) a peer rating -- A Class Play, would all in some way seem to meet the criterion that variables should be behaviorally defined.

One of the most important and useful kinds of information obtained by a school is the teacher's professional judgment of a child's behavior. Teachers see children over a period of time, in a variety of situations, including work, play and stress. It would seem logical that the teacher's rating could be the most useful index of a pupil's growth and development. Many studies have shown the reliability of teachers, not only to predict adaptive failure, but to recognize behavior which is disturbing to them as teachers, and which, therefore, requires some attention (Thompson, 1940; Mitchell, 1942; Ellis and Miller, 1936; Meyer, 1956, 1957; Berlin, 1959; Rutter, 1967; Walker, 1970). In this particular instrument (A Behavior Rating of Pupils) the rating is by means of a checklist of eight behaviors, in context, --the major predictors, in a large multivariate analysis, of a failure to adapt.

The second instrument (Thinking About Yourself) takes into account that thinking, like speech, is behavior of a covert nature which manifests itself to the child in terms of private experience. That it exists as a process is attested by certain external manifestations, for example behavior patterns which involve problem solving and correct behavior. Such covert behavior has the advantage that one is able to rehearse and revoke the behavior without external punishment. One is given a chance to try again if private consequences are not reinforcing.

> The 'speaker' and the 'listener' inside the same skin, speak and understand the same language in all its nuances. 'They' are sensitive to all resonances of meaning based on common experiences (Crawford, 1975, p. 15).

This instrument elicits particular reinforcement content (thoughts) that are based upon previous contingencies. It is argued that the child who sees his present contingencies of reinforcement as different from those he 'thinks' of as being considerably more reinforcing, might be having difficulty adapting.

Bower's comparisons of children with adaptive failure with those who appear to have adapted well have found that, generally, the former exhibited greater self-dissatisfaction about their life and showed significantly greater discrepancies between self and wanted-self (ibid). Bower acknowledged that when a child is asked to communicate about himself he may not convey what one considers to be an accurate self-concept, particularly when he has to write it down. In some cases a child's self-concept might need to deny problems but, "...inconsistencies are part of the structure of self (ibid, p. 67)."

The accepted premise behind the instrument would seem to be that the greater the difference between the wanted-self and present-self, the greater the child's dissatisfaction with his present status. This is not to suggest that little or no difference is optimum but only surmises that children who see themselves as different from their classmates, and from what they would like to be, may be at risk.

As far as A Class Play is concerned, it has been attested that social stimuli, for example, other children, are reinforcers. It is therefore expected that each child has both negative and positive qualities as a reinforcing agent (because of differing contingencies of reinforcement).

If a number of children see a particular child as behaving in a negative way it can be argued that such a child probably produces sufficient aversive stimuli to mark him out as an adaptive failure within the class.

Philips et al (1955), studying the relationship between personality tests and sociometric choices, found that children who were perceived negatively by peers had the poorest personality scores. The converse also held true. Bower's study has shown that not only are the roles assigned to children who are having difficulty in adapting the most negative ones, but such children are seldom seen by peers as playing positive or neutral parts.

Predisposing Factors

The environment in which maladaptive behavior may be acquired and the mechanisms by which it occurs, have been widely studies. From a sociological view point Miller (1958) has stresses social class, Cohen (1955) deviant social organizations and Cloward and Ohlin (1960), social inequality. It would seem however that in many studies criteria for subject selection are frequently ill-defined. Heterogeneous populations, uncontrolled for age, sex and social status, all with a variety of deviant behaviors, are frequently utilized. The literature is replete with studies of disturbed versus non-disturbed children or families (Schuman, 1970) or clinic versus non-clinic children, and too frequently, the same antecedent familial variables seem to have been taken for granted. Other studies define their deviant groups well, but lack the non-deviant control groups that are essential to contrast interaction patterns with the normal. A recent emphasis has been placed on the importance of studying the interaction of the family, but most investigations stop at the mother-child relationship "partly because of the greater assessibility of mothers... and partly for theoretical reasons, (Hetherington and Martin, 1972)."

It is true that parents trying to nurture and develop a human infant have many difficulties to overcome, although many of these difficulties can be observed, and some of them even measured. It is also true that certain physiological or temperamental characteristics are possibly hereditary in nature and can influence the course of subsequent family interaction. Autonomic nervous system reactivity, sociability and activity levels can all be such factors (Werry, 1972). Several physical and psychological factors can disrupt the foetus. Maternal disease (Montagu, 1962; 1964), X-ray treatment (Murphy, 1974), malnutrition (Pasamanick *et al*, 1966), drugs (Montagu, 1963), blood type compatability (Pasamanick and Knoblochm 1959, 1960), stress (Sontag, 1962), have all been noted as possible causes for later maladaptive behavior by the child (Pasamanick *et al*, 1956; Pasamanick and Knoblock, 1961).

Obstetric factors have also been cited. Layman (1959) states that children born after a short sharp labor, or after difficult pregnancies tend to be irritable, hyperactive and difficult to manage. Yacorzynski and Tucker (1960), amongst others, talk about the 'constitutionally difficult' child who has suffered from anoxia. Honzick et al, (1965) go further and show from their correlational studies, that such children are more likely to have perceptual and psychomotor deficits. Ucko (1965) suggests that asphyxia at birth may result in quite specific temperamental behavior, notably unusual sensitivity, over-reactivity to stimuli and a tendency to become upset when customary routines are changed. Fraser and Wilks (1959), using a matched control group in Aberdeen, supported both Ucko and Honzick.

Prematurity and/or low birth weight is correlated with various later complications, distractibility, hyperactivity, irritability, personality disturbance, hypersensitivity, and reading difficulties (Knoblock et al. 1959; Braine et al, 1966). Drillen's (1964) study is of importance here; using the Bristol Social Adjustment Guides, in a longitudinal study, she found that the proportion of youngsters considered maladjusted increased as birth weight decreased; the most common maladaptive behaviors evinced were hyperactivity and restlessness - the only types of behavior which Stott (1965) and Herbert (1972) feel can be associated (with any degree of causality) with perinatal factors. However, as Wolff (1967) indicates, it would not be surprising if other behaviors of a reactive nature (e.g. delinquency) followed the educational and social failures to which such children are prone.

Stott (1959, 1966, 1962, 1975) argues that some emotional problems result from a particular susceptibility to stress due to a congential impairment of temperament and refers to "multiple congential impairment" as an additive fact. The postulated impairment of temperament is thought to lead to faulty motivation typical in his label of "unforthcomingness" -- a child who has an impairment of natural assertiveness, who does not feel the challenge to solve problems, nor keeps abreast of other children , who lacks confidence, is timid ("mousy" as Stott puts it), and dependent. Stott feels that this is a specific syndrome and that psychologists who look upon the overdependence as being brought on by anxious over-solicitous mothers are quite wrong in such cases. On the other hand he sees a relationship between this type of personality problem and a history of illness or other stresses suffered by the mother during pregnancy, particularly during the last four weeks since he believes it is at this stage that the fine mechanisms that control behavior develop.

Zigler and Child (1969) point out that interpretations of socialization, in terms of social reinforcement, have shared a common model of the child as an essentially passive organism under the control of a socializing agent who dispenses rewards and punishments, Danziger (in Herbert 1972) however is very discontented with such studies .... "This preoccupation led to a neglect of those factors contributing to the course of socialization...hereditary and congential conditions (p. 67)." Such a point is demonstrated in Thomas et al, (1968) who state that they have been increasingly convinced that environmental influences can not accommodate the range and variability of children's behavior and that temperament must be considered as an independent determining variable in itself.

Searching for predisposing influences in the development of maladaptive behavior has caused researchers to look at numerous variables beyond the prenatal and perinatal stages. Yarrow (1961) has emphasized that it is a mistake to equate maternal deprivation and maternal separation. Certainly the single term "maternal deprivation" has led to much confusion in the literature and has been blamed for many childhood maladaptive behaviors. What does seem to be important however is whether or not the child has been able to form a bond, since, as Rutter (1972) indicates, the child can have his mother, but hostility and discord in the relatship is frequently associated with later antisocial behavior.

Broken homes too have been stressed as an important contributing factor in the development of maladaptive behavior.

Children with "conduct disorders more frequently come from homes that have been disrupted by desertion, divorce, death, and absence of father (Quay and Werry, 1972, p. 42)." Even cross-cultural studies have found that in societies in which the father's effective presence is minimal, a high rate of theft and crime exists (Bacon, Child and Barry, 1963). The Glueck and Glueck (1950) study found that twice as many of their delinquent population came from homes which were rated 'father-absent' and accounted for 43% of their total population: many other studies have arrived at the same conclusion, namely that the effects of a father's absence can be extremely damaging.

Glueck and Glueck (1950) found that 84% of the delinquents in Massachusetts reformitories had families that included criminals; this would seem to add grist to the social-learning theorists who have emphasized imitation of models as one of the important factors in the development of certain maladaptive behavior. Amongst such studies is that of Becker et al, (1959) who report that parents of children with conduct disorders were maladjusted, inconsistent and given to explosive anger. Mothers were often tense and frustrating and fathers were inadequate and emotionally distant. The few experimenters (Hewitt and Jenkins, 1946; Lewis, 1954) using case history material to try and relate parental behavior to dimensions of problem behavior, suggest that the unsocialized child has faced parental rejection, the neurotic has been over-controlled and the delinquent has had to deal with neglect, permissiveness and exposure to delinquent sub-groups.

Bladder and bowel training does not seem to have an adverse effect on childhood adjustment per se, but the consequences of a series of associated attitudes and practices on the part of a generally severe mother does (Sluckin, 1973; Rutter et al, 1970; Turner, 1974). On the whole virtually every conceivable event that can take place in a child's growing up has been documented (like bladder and bowel training, types of punishment used in the home, birth order, whether of not the mother works, social class or even the types of food the child does or does not eat) and used as reasons for or against the development of maladaptive behavior.

Probably one of the most useful works is the Berkeley Growth Study which has made a major contribution to the knowledge of the frequency of the kinds of symptoms of maladaptive behavior found in children of various ages. It has made use of repeated assessment of symptoms in the same children to learn at what age high symptom levels tend to persist and to learn which symptoms are transient, and which are lasting. The study showed that most problems do not seem age specific, except for behavior such as destructiveness, demanding attention, somberness, jealousy, and shyness. It did however indicate that children with many symptoms at one age tend to have many symptoms at a later age, but, before the age of six or seven, symptoms have little predictive value for later adjustment (McFarlane et al, 1954).

Thomas, Chess and Birch, (1968) also feel that early symptom levels are not good prognosticators. They studied 136 babies from shortly after birth and followed up with regular parent interviews and observations along nine behavior scales. Before the age of seven, 21% had been referred for psychiatric help and by the age of nine a further 10% had been referred. The referral system was incredibly specious, but only one of the behavior scales was correlated to pathology in these cases --'high activity' scored in the first year of observation.

Other studies looking for predictors also show that six is that earliest age at which reasonable predictions can be made. Mulligan (1963), in Britain, cites predelinquents as being underachievers by the age of eight. Such children later quarreled easily, ignored the teacher, cheated and played truant. Havighurst (1962) showed that children chosen as most aggressive by the teacher in the sixth and seventh grade, particularly if they were doing poorly in school, later became delinquent. In addition Mulligan found that nervous habits are unrelated to delinquency.

If one accepts that the risks of pathological behavior, and the predictive value of such behavior in childhood, is important, then follow-up studies can be particularly useful in learning which children are likely to develop maladaptive behavior. The outcome of such behavior, and the possible effects of any treatment can also be studied. No follow-up study can show cause, but it can indicate probable causes.

Can maladaptive behavior at a certain age indicate that the child will still be having problems at a later stage? Can the results of this later stage predict delinquency or the need for specialized treatment? Both of these questions would seem to open up a whole vista of other important questions.

CHAPTER TWO

THE PROBLEM

Certain broad criteria emerge from the literature as likely to be important in any process for the screening of children who are failing to adapt, especially in a process which is to be used on a large scale. Amongst the major points is that screening processes, in general, are not intended for diagnosis, nor for classification, nor for aetiology. They are similar in purpose to other screening activities carried out in the school: for example, hearing or vision screening programs, and would seem typically to follow the objectives established by the pupils schools. These objectives allow for early identification of certain problems, the introduction of remedial services, the expansion of teacher awareness, and where necessary and available, special placement.

It would seem that if a screening process is going to be used them the procedure should be sufficiently straightforward for the average teacher to undertake it without any long training. The results of the particular procedure in question should then lead to a tentative identification of children who are having difficulty in adapting, but should not encourage the teacher to diagnose problems, nor label, nor categorize children. It should be nothing more than a screen, The process should also be inexpensive to use and should neither violate the privacy of individuals nor good taste.

Bower's battery of instruments would seem not only to meet the above criteria but it also uses more than one perception of a child. Effective screening however gains effectiveness from two sources: the first is the relative reliability of the procedure itself and the second is the validity of the results obtained. If both reliability and validity are satisfactory, specific information about the content of any of the scales, in so far as they can provide a more detailed description of adaptive and maladaptive behavior, is of specific interest. It would also be of interest, should a certain pattern of maladaptive behavior be shown, to see if there are any specific epidemiological aspects in the case histories of the sample screened-out by instruments.

The problem to be investigated in this thesis will therefore be fourfold, namely,

I - To examine Bower's instrument, "A Process for the In-School Screening of Children with Emotional Handicaps," to see if it reliably and validly screens out children who are failing to adapt.

II - To evaluate this instrument and see if it leads to a possible typology of maladaptation.

III - To assess whether those subjects screened out as 'at-risk' by the instruments in 1973 can still be considered 'at-risk' in 1976, and whether there are any significant epidemiological signs which clearly discriminate between the experimental and the control groups.

IV - To see if the data give any indication of being useful in producing a classification of maladaptive behaviors.

A Process for the In-School Screening of Children with Emotional Handicaps is a battery of tests developed by Eli Bower (1960), designed as a rapid device to select from the classroom children who are 'at-risk' as being "emotionally handicapped".

For the purpose of their work Lambert and Bower (1962) define the "emotionally handicapped child" as one who has moderate to marked reduction in behavioral freedom, which in turn reduces his ability to function effectively in learning or working with others. Such restrictions make the child susceptible to one or more of "an inability to learn, unsatisfactory interpersonal relationships, inappropriate behavior, unhappiness, and repetitive symptoms of illness after stress (ibid, p. 10)."

There are three screens in the battery, a teacher rating, a self rating, and a peer rating.

A. "A Behavior Rating of Pupils" (BRP) - Appendix A.

This instrument consists of eight pages, each having a seven column pyramid grid containing forty-one boxes and a one sentence description of negative behavior. The teacher is required to locate every pupil in the class on a scale that runs from "most like" to "least like", putting the pupil's names in the appropriate boxes, one to a box. In effect, this produces a normal distribution of ratings on a five-point scale.

After each of the eight behavior ratings has been completed, a score grid is prepared. The rating for each statement for each child is the number of the column in which the pupil's name is to be found.

When the score grid has been completed, the ratings for each pupil are added horizontally: the sum of these ratings is the pupil's score.

If the score is high it suggests that the pupil has been frequently judged "most like" the negative behavior statements.

B. "Thinking About Yourself" (TAY) - Appendix B.

"Thinking About Yourself" is an individual personality questionnaire which endeavors to elicit from the pupil an "intra-self" measure of the relationship between his perception of this inner environment and his conception of what it ought to be.

Section I contains forty sentences describing a boy or girl. The pupil has to check one of four categories at the side of each sentence, depending if he would like "very much", "perhaps would like", "would not like", or "would very much not want to be", like the boy described in the sentence.

Section II contains the same forty sentences about a boy. In this section, the pupil is required to circle one of four choices, depending if the pupil sees himself "very much like", "somewhat or sometimes like", "not very much like", or "not at all like" the boy described in the sentence.

The pupil marks Section II as he sees himself and he marks Section I as he would like to be. Since the items are the same in both sections, the pupil's present self-concept can be compared with his ideal self-concept. The items checked by the pupil are assigned the appropriate score and the answers translated into a total score. The same process is carried out for Part II.

For Part I of this instrument, a scale is made matching horizontal sequence YES, yes, no, NO, with 1, 2, 3, 4.

To score individual items, the smaller number obtained on the equivalent question is subtracted from the larger, i.e., if Item 5 Part I was scored 3 (answered "no") but Item 5 on Part II was scored 1 (answered "YES") the discrepancy score will be 2. This is done for all forty items and the combined score becomes the score for the instrument.

The premise behind this instrument is that the larger the difference between wanted or desired self (Do you want to be like him?) and present self (Are you like him?), the greater the child's dissatisfaction with his present status.

A low score indicates that a pupil's ideal self and perceived-self are very much the same. A high score indicates that the pupil sees himself much differently from what he would like to be.

C. "A Class Play" (CP) - Appendix C.

The instrument contains descriptions of twenty hypothetical roles in a play, with instructions directing each pupil to choose a classmate who would be most suitable and most natural in each of the roles.

Since the negative parts of the instrument are even numbered and the positive or neutral parts are odd-numbered, the concept that a child's peers have of him can easily be gleaned and compared.

The scoring process is that of computing the total perceptions of each child by his peers and the negative perceptions of each child by his peers. The relationship between the two perceptions is then quantified, using a percentage chart - Appendix D. High percentages indicate that a Ss is identified with the negative roles by his peers.

Combining the Scores for Screening

To screen-out the subjects who may be in need of specialized help, the means and standard deviations are computed for each instrument. Each subject who scores at, or above, one standard deviation from the mean is considered 'at-risk' on that particular instrument. The 'screened-out' group will be those subjects who score 'at-risk' on two or more of the instruments.

The Subjects

The Process, when used in the United States, had the greatest reliability and validity with grades three to six. For the present study the whole of grade three from an Albertan school is used. The population is a mixed urban/rural one with farming and oil-drilling predominating. The school caters for approximately five hundred children in grades one to three with a total of one hundred and fifty nine in grade three, of whom one hundred and fifty one were present for the study. The Experimental Group consisted of those Ss who received 'at-risk' scores on two out of three instruments and are thus, according to the *Process*, liable to be 'adaptive failures'. The Control Group consisted of an equal number of Ss who, although they had taken part in the screening procedure, were not screened-out by the Process; they were selected by random sampling. There were thirteen boys and seven girls in each group.

It should be noted that a short workshop was held with the seven teachers involved in the study to inform them of the instruments, show them how to use the materials and to explain the rationale behind The Process. An important reminder in such a study is that it is necessary for teachers to know the children really well before using The Process. It is for this reason that the study was not begun until May 1973, nearly the end of the school term.

Reliability

One month after the initial screening three classes underwent the same screen and, following this test-retest method, reliability coefficients and reliability indices were found.

Contrasted Group Validity

In the contrasted group method of assessing validity two independent groups were defined in relation to the construct maladaptive behavior, by the method described above. Differences between the groups on the three instruments were then tested for statistical significance, using the following hypotheses.

$H_{1.0}$: Ss identified as failing to adapt according to the instruments, will score significantly higher on "A Behavior Rating of Pupils" than will those Ss not so identified.

$H_{1.1}$: Ss identified as failing to adapt according to the instrument will score significantly higher on "Thinking About Yourself" (indicating a discrepancy between wanted self and desired self) than will those Ss not so identified.

$H_{1.2}$: Children who are failing to adapt will be selected by peers more frequently for negative roles in "A Class Play".

In $H_{1.0}$, and $H_{1.1}$ a confidence level of .05 is accepted as discriminating sufficiently between groups but in $H_{1.2}$ a lower limit ($p \leq .1$) is accepted since the proportion of discrimination between items is restricted because some of the parts of the play limit choices to either a boy or to a girl.. To examine how well the instruments discriminate between the two groups, each instrument was tested item by item, to see which items have sufficient discriminatory power ($p \leq .05$), to be considered a useful part of the battery.

Significant discriminating items were used in a Principal Component factor analysis to see if there were any profiles or typologies evinced by the data and to see if this approach would also hold in establishing validity by providing specific information about the content of the instruments.

As an adjunct to the above, an analysis of variance was made to see if there was any difference between the experimental and control groups in terms of academic achievement, age, sex and intellect. The information necessary for such an analysis was available from each child's file.

The measure of intellect was the Lorge-Thorndike Test of Intelligence, a test which every child in the school receives as part of the County's policy. The test purports to examine each child's ability to work with ideas --- it is a group test with two major components, a Verbal Battery and a Non-Verbal Battery. The Verbal Battery gives scores on vocabulary, sentence completion, arithmetic reasoning, and verbal analogy. The Non-Verbal Battery gives scores on pictorial classification, picture analogy and numerical relations and, unlike the first battery, claims to be "not directly dependent on an ability to read" - Lorge, Thorndike, and Hagen (1967).

Academic achievement was measured by the Iowa Test of Basic Skills which contains "the measurement of certain skills crucial in the whole educational development of the pupil" - Manual, 1960. The test gives scores in the following areas; reading, comprehension, language skills, work study skills, and arithmetic skills. The following hypotheses, to investigate additional support for contrasted group validity, were tested.

$H_{2.0}$: There is a significant difference in intellect (as measured by the Lorge-Thorndike) between the experimental and the control group.

$H_{2.1}$: There is a significant difference in academic ability (as measured by the Iowa) between the experimental and the control group.

$H_{2.2}$: There is a significant difference in marks given by the teachers to the experimental group and to the control group.

$H_{2.3}$: There is a significant difference in age between the experimental and the control group.

The usefulness of any instrument which screens out children as being 'at-risk' stands or falls on whether these children are adaptive failures not only at the time of the screening, but also at a later date. In the present study it is predicted that the experimental group will, three years later, be adaptive failures. The sample will therefore be looked at in terms of contrasted group validity on the construct 'failing to adapt'.

For the Process to be considered as valid, not only would it be expected that the control group is still significantly different from the experimental group but that the behavior shown by the latter group, when compared to that of the former, can be considered as maladaptive. If this is so them it would also be expected that there will be a difference between the groups is terms of epidemiology, signifying the possibility of very different contingencies for each group.

In order to see if those Ss screened-out as being 'at-risk' can be considered as being a distinct group from an epidemiological point of view, and to see if now, three years later, the experimental group are having a significantly greater problem in adapting than are the control group, data from parent interviews was collected and the following hypotheses were then tested.

$H_{3.0}$: The experimental group will have a significantly greater number of educational problems than will the control group.

$HH_{3.1}$: The family histories of the experimental and the control groups will be significantly different.

$H_{3.2}$: The birth histories of the experimental group will be significantly different from those of the controls.

$H_{3.3}$: The development of the experimental group during infancy and early childhood will be significantly different from that of the control group.

$H_{3.4}$: The language development of the experimental group will show a significant difference to that of the controls.

$H_{3.5}$: There will be a significantly greater number of general behavior difficulties noted amongst the experimental group than by the controls.

The mothers of each of the experimental and the control groups were seen and, using a structured interview technique, standardized information was sought. A detailed history of the Ss was taken using a protocol established by the experimenter and presently in use at The Alberta Child Development Center. The protocol has been continually modified over the last three years by the staff and consultants at The Center to yield what they consider to be the most pertinent epidemiological information for the multidisciplinary clinic. (See Appendix E.)

The protocol probes six major areas, viz: educational history, family history, birth history, development during infancy, language development and a description of the Ss current social behavior.

Since there was data available on the subjects latest academic standing this was compared to that taken in 1973 to see if, over three years later, there had been any significant upward or downward movement by either the experimental or the control group.

As a further aid to predictive validity, the following hypothesis allied to $H_{2.0}$ - $H_{2.3}$, was tested.

$H_{4.0}$: It is predicted that in December 1975 the experimental group will still be significantly different from the control group in terms of teachers' marks and *Iowa* scores.

The data from the parent interview was subjected to an hierarchical group clustering analysis to see if the data held any possibilities for a rudimentary classification scheme. From the clustering analysis five categories were noted.

CHAPTER THREE

PRESENTATION AND ANALYSIS OF DATA

The study began in May 1973 when an entire Grade three, one hundred and fifty one subjects, from a rural Alberta school, was screened using The Process for the In-School Screening of Emotionally Handicapped Pupils. The distribution of the scores obtained on each instrument can be seen in Tables 3. Using the parameter of one of more standard deviations above the mean as placing a subject 'at-risk', and being 'at-risk' on two or more of the instruments as being 'screened-out', it will be noticed in Table 4 that seven subjects reached the required level on all three instruments whilst thirteen did so on two out of the three: it is these twenty subjects, thirteen boys and seven girls who formed the Experimental Group.

It would seem from Table 5 that BRP + CP, and BRP + TAY + CP were the more useful combinations for screening purposes since TAY was not found at the 'at-risk' level combined with BRP, and only twice was it combined with CP. The lack of significant correlation between BRP and TAY was therefore expected as was the close association between BRP and CP (Table 6), which indicated 44% of common variance.

TABLE 3

THE BASIC DATA FROM THE INSTRUMENTS

Instrument	Mean	Standard Deviation	Range in T-Scores
BRP	31.02	6.60	25.7 - 74.2
TAY	36.42	12.13	20.0 - 75.9
CP	48.40	29.40	33.4 - 67.7

TABLE 4

DATA DISTRIBUTION N= 151

Standard Deviations :	-3	:	-2	:	-1	:	0	:	1	:	2	:	3
Subjects BRP		2		16		55		54		22*		2*	
Subjects TAY		1		11		62		55		18*		4*	
Subjects CP		0		24		57		46		24*		0	

*Scores 'at-risk' viz: 15.89% BRP, 14.57% TAY, 15.89% CP

TABLE 5

COMBINATION OF 'AT-RISK' SCORES FOR SCREENING

Instrument	BRP	BRP+TAY	BRP-CP
'At-risk' subjects	5	0	11*
Instrument	TAY	TAY+CP	CP
'At-risk' subjects	9	2*	9
Instrument		BRP+TAY+CP	
'At-risk' subjects		7*	

*Represents the combination of instruments used to screen out the experimental group.

TABLE 6

INSTRUMENT INTER-CORRELATIONS
AND LEVELS OF SIGNIFICANCE

	CP	p	TAY	p
BRP	.66	.001	.18	NS
CP	-	-	.25	.01

Reliability

Reliability coefficients were established using Pearson Product-Moment formulae and were based on a test-retest method carried out three weeks after initial screening (see Table 7) with three of the same classes.

TABLE 7

RELIABILITY COEFFICIENTS OF THE BOWER INSTRUMENTS

	r
Thinking About Yourself:	.71
A Class Play:	.88
A Behavior Rating of Pupils:	.88

N = 79

The coefficient obtained from TAY indicates that the sample had changed their mind somewhat from the first application, but the instrument had a sufficiently high degree of reliability to warrent further investigation. The correlation between the two applications of CP, at .88, is the same as that reported by Lambert (1962). The correlation for BRP must also be considered satisfactory.

Reliability Indices

In order to measure the dependability of the test scores by showing how well the obtained scores may agree with their theoretically true values, the indices of reliability (the coefficient R_I) were calculated using the coefficients of reliability. The figure obtained gave the proportion of variance of the true scores. Each of the figures in Table 8 predict the highest correlation that each instrument is capable of yielding in its present form, with the Ss used in the re-test.

TABLE 8

RELIABILITY INDICES OF THE BOWER INSTRUMENTS

Instrument:	r :	Variance :
CP :	.94 :	88% :
BRP :	.94 :	88% :
TAY :	.75 :	56% :

Using $r^2 = r_{1_I}$

Validity

Four types of validity were estimated on The Process for In-School Screening: each is discussed below.

Contrasted Group Validity

Assuming that the distribution of the instruments was normal (Table 4) and that the population variances did not differ markedly, an unbiased estimate of variance was obtained and each hypothesis tested for significance between the means of the experimental group and the remaining sample. The results are shown in Table 9. $H_{1.0}$: "Ss identified as failing to adapt, according to the instruments, will score significantly higher on BRP than will those Ss not so identified" is accepted at the .01 level.

$H_{1.1}$: "Ss identified as failing to adapt according to the instruments will score significantly higher on TAY than will those Ss not so identified" did not reach significance and is therefore rejected, whilst, $H_{1.2}$: "Ss who are failing to adapt will be selected by peers more frequently for negative roles on a CP" is accepted at the .001 level of confidence.

There was no statistically significant difference between the means of the control group and the total sample - it can therefore be taken that the control group is representative of the total sample.

Since the experimental group grand mean was significantly greater than the grand mean of the total sample, contrasted group validity can be reasonably claimed, particularly would it seem to be so on the instruments BRP and CP.

TABLE 9

A COMPARISON OF GROUP AND INSTRUMENT MEANS

Instrument	Experimental Group N 20	V	Control Group N 20	t	Total Group N 151	t
	$\bar{X}$		$\bar{X}$		$\bar{X}$	
BRP	42.23		29.67	3.08*	31.02	.41
TAY	44.38		34.33	1.94	36.33	.30
CP	90.56		42.20	4.56**	48.40	.73

* Level of significance p .01 with 38 d.f.
** Level of significance p .01 with 38 d.f.

As a further measure of contrasted group validity, various educational criteria, teachers' marks, scores achieved on the Iowa and intelligence scores from the Lorge-Thorndike, all readily obtainable from the subjects' school files following the County's policy in December 1972, were compared for the experimental and the control groups. The significance of the difference between the two means for independent samples was examined using a t-test (Table 10).

It will be noted from Table 10 that the groups are statistically different on every variable except the teachers' ratings in arithmetic, the Iowa rating in arithmetic, and age. The experimental group is significantly lower in both verbal and non-verbal intelligence, language, vocabulary, reading and work study skills. It would seem therefore that the experimental group is likely to experience far more problems in school-work than would a normal sample. $H_{2.0}$: "there is a significant difference in intellect (as measured by the Lorge-Thorndike) between the two groups" is therefore accepted. Likewise $H_{2.1}$ is accepted, viz. "there is a significant difference in academic ability (as measured by the Iowa) between the two groups." in all aspects of the test, except arithmetic. Exactly the same can be said for $H_{2.2}$ viz. "there is a significant difference in age between the two groups" is rejected.

Based on the above results, contrasted group validity can be reasonably claimed on all variables except age, and arithmetic marks. It is of interest to note that if Mental Age instead of I.Q. had been used as a measure, then most of the experimental group would have been performing close to their ability. This would also seem to have important connotations with regard to the children's behavior, especially form a developmental view point.

TABLE 10

T-TEST COMPARISON OF THE EXPERIMENTAL (X) AND CONTROL (Y) GROUPS ON THEIR DECEMBER 1972 FILE MATERIAL.

Variable	$\bar{X}$	$\bar{Y}$	s_X	s_Y	t	p
Verbal I.Q.	90.80	114.14	16.84	24.25	1.85	.05
Non-Verbal I.Q.	96.60	115.57	12.54	18.53	1.97	.05
Reading**	1.80	3.00	1.64	1.00	1.71	.05
Language**	1.60	3.43	1.52	.98	2.55	.01
Arithmetic**	1.80	2.45	.84	.98	1.16	ns
Vocabulary*	1.80	3.57	1.30	.98	2.70	.01
Reading*	1.40	3.00	1.14	1.00	2.58	.01
Work Study Skills*	2.00	3.86	.71	1.07	3.37	.005
Arithmetic*	1.80	2.57	.84	1.13	1.29	ns
Age	8.10	8.70	.50	.40	.79	ns

Degrees of Freedom 38

*Iowa scores. **Teacher's ratings.

Item Validity

To see how well individual items in the instruments discriminated between the experimental group and the remaining sample, item analyses were conducted. Although each instrument appears to have an approximately normal distribution (Table 4) non-parametric statistics were generally used, except for BRP since the data for this instrument BRP are compiled from a simplied Q-Sort.

A Behavior Rating of Pupils

From Table 11 it will be noted that the analysis of variance shows a very significant difference between items, thus indicating that all of the items clearly differentiate between the groups. Such a result is hardly surprising since BRP was one of the three instruments used in the definition of the criterion group, the between group differences might therefore be spuriously large. This procedure, weak though it may be, customarily is used in the item analysis of tests -- using a total score to define the criterion groups by which items and subtests are validated.

A further break-down of the instrument, using a Chi^2 analysis between the boys and the girls in the experimental group, yielded only one item with a significant difference, viz. "this pupil is unhappy or depressed. He or she may cry easily, be inattentive, or daydreams." An examination of the means of the two groups on the item indicated that the experimental girls' group was more likely to score highly on this item than was the boys'.

Table 12 makes an interesting comparison between the sexes when contrasting the subjects who were not screened-out by the instruments. It can be noted that three items show definite sex differences and items 1) "this pupil gets into fights or quarrels with other pupils more often than others" and 4) "this pupil makes unusual or inappropriate responses during normal school activities, his behavior is unpredictable" show very significant differences between the groups. The boys have the greater mean in each case. Such a finding is quite remarkable, particularly as no such difference is found in the experimental group.

Because of the small number in the experimental group further items, which might show a sex difference, were not investigated (e.g. experimental boys versus total boys, experimental girls versus total girls), but, in order to see how closely the items were related, a Pearson-Product-Moment Correlation analysis was made (Table 13). It can be seen that item 2) is significantly related to only one other variable and therefore, as a screening item, it lends little to the process. Item 5) "this pupil works extremely hard to the exclusion of other interests or activities, (he) pours all of his energies into his school work" is correlated negatively will all of the other items, thus suggesting if the item is to be included at all, for a similar population under study, the scoring system should be changed completely around.

TABLE 11

BRP ANALYSIS OF VARIANCE BETWEEN ITEMS

Item	Experimental Group (n=20) vs. Control Group (n=131)	F	p
1	This pupil gets into fights...	24.15	.000005
2	...has to be coaxed to work or play	6.37	.01
3	...has difficulty in learning...	20.86	.00001
4	...is unpredictable...	23.21	.000005
5	...works hard...to exclusion of other interests	21.82	.00001
6	...behaves in ways which are dangerous	29.11	.000001
7	...is unhappy and depressed	27.33	.000001
8	...becomes upset or sick...when faced with problems...	35.54	.000001

Degrees of freedom 1:149

TABLE 12

BRP ANALYSIS OF VARIANCE FOR SEX DIFFERENCES BETWEEN ITEMS FOR THE TOTAL SAMPLE MINUS THE EXPERIMENTAL SAMPLE AND CHI SQUARE ANALYSIS BETWEEN THE SAME ITEMS FOR THE EXPERIMENTAL GROUP.

Item	Total Sample minus Experimental Sample		Experimental Sample	
	Boys V Girls (n=65) (n=66)		Boys V Girls (n=13) (n=7)	
	F	p	Chi^2	p
1	15.55	.00001	.01	ns
2	3.18	ns	3.09	ns
3	.07	ns	.02	ns
4	12.94	.00005	2.37	ns
5	3.12	ns	3.19	ns
6	4.07	.05	[illegible].74	ns
7	.00	ns	7.88	.05
8	2.40	ns	2.78	ns

Degrees of freedom 1:129

TABLE 13

PEARSON CORRELATION COEFFICIENTS FROM BRP

Item	1	2	3	4	5	6	7
2	-.10						
3	.29*	.21					
4	.59*	.06	.47*				
5	-.58*	-.08	-.51*	-.62*			
6	.56*	-.01	.25*	.55*	-.49*		
7	.31*	.45*	.47*	.42*	-.48*	.38*	
8	.35*	.20	.39*	.47*	-.45*	.45*	.61*

*Correlation significant at p > .ol

n = 151

Thinking About Yourself

The discriminatory power of the items which comprised the instrument TAY was investigated using a Chi^2 analysis (Table 14). The boys in the experimental group were compared with those in the remaining sample and a similar analysis was made between the girls' groups. The total experimental group was then compared to the total sample, minus the experimental group.

Only eight out of the forty items reached sufficient significance to discriminate between the boys' groups, whilst fifteen items (including eight different ones) discriminated between the girls' groups. When the groups were combined there were still only nine items (22.5%) which discriminated between the experimental subjects and the others. Because of the inconsistencies already noted on this instrument, and because of its general lack of discriminatory power, no further analysis was attempted. as an overview, typically a subject who was screened-out on this instrument tended not to want to become a teacher, does not play games whenever possible, does not expect to become rich and famous, cries a lot, does not talk to his parents about his problems, hits smaller children but does not want to, is unable to stay in bed late on school holidays, and does not want to eat lots of different foods. Sex differences, because of the instrument's general unreliability, and because the numbers in the experimental groups are so small, were not investigated.

TABLE 14

A CHI^2 TEST OF THE DISCRIMINATORY POWER OF THE ITEMS IN TAY

Item	Grp I*	Grp II*	Grp III*	Item	Grp I*	Grp II*	Grp III*
1	ns	.01	ns	21	ns	.05	ns
2	ns	ns	ns	22	ns	ns	ns
3	ns	ns	ns	23	ns	.001	ns
4	.05	.05	.01	24	ns	ns	ns
5	ns	ns	ns	25	.01	.001	.001
6	.001	ns	.001	26	.05	.05	.01
7	ns	ns	ns	27	ns	ns	ns
8	.05	.01	.05	28	ns	ns	ns
9	ns	.01	ns	29	ns	.01	ns
10	ns	.05	ns	30	ns	ns	ns
11	ns	ns	ns	31	ns	ns	ns
12	ns	ns	ns	32	ns	.05	ns
13	ns	ns	ns	33	ns	ns	ns
14	ns	ns	ns	34	ns	ns	ns
15	ns	ns	ns	35	ns	ns	ns
16	ns	ns	.05	36	ns	ns	ns
17	ns	.001	.01	37	ns	.ol	ns
18	ns	ns	ns	38	ns	ns	ns
19	ns	ns	ns	39	.001	.05	.01
20	ns	ns	ns	40	.05	.01	.01

*Group I is Experimental Boys' vs. Control Boys (n_1=13, n_2=65)
Group II is Experimental Girls vs. Control Girls (n_1=7, n_2=66)
Group III is Experimental Boys and Experimental Girls vs. Control boys and Control Girls (n_1=11, n_2=7)

A Class Play

The power of each item on CP was studied by comparing the number of times subjects in the experimental group were chosen for an item, with the times an equal number of subjects from the remaining sample, selected at random, were chosen for the same item. It should be remembered that even number items are negative roles, whilst the odd numbered items are the positive or neutral roles.

It can be seen from Table 15 that only four items do not statistically separate the boys' groups and two of these items are specifically girls' roles. It would seem therefore that, as far as this instrument is concerned, only the roles 2) "someone who is often afraid and who acts like a little boy or girl" and 13) "someone who is liked by everybody and who tries to help everybody," do not differentiate between the two groups of boys. It would also suggest that some boys in the experimental group are just as popular with their classmates as are those who have not been screened out.

Eight of the items were not significant discriminators for the girls' groups, but care has to be taken when extrapolating since the experimental sample was so small, but in general it would seem that the roles selected for the girls were rather different than those given to the boys. This would be expected because the instrument contains several sex specific roles, but a comparison of the total experimental group with the rest of the sample indicated that only four items did not significantly dicriminate between the two groups and of those, only items 5) and 8) were sex specific.

TABLE 15

A CHI^2 TEST OF THE DISCRIMINATORY POWER OF THE ITEMS IN CP

Role		Grp I	Grp II	Grp III
1	A true friend	.001	.001	.001
2	Somebody who is often afraid...	ns	ns	ns
3	A class president	.001	.001	.001
4	Somebody who is stuck-up...	.001	ns	.001
5	A girl...teacher...	ns	.05	ns
6	A mean, cruel boss.	.001	ns	.001
7	A boy...team captain...liked...	.001	ns	.01
8	A mean bossy sister.	ns	.01	ns
9	Someone who is smart...	.001	ns	.001
10	A person who gets angry...	.001	ns	.001
11	Someone who is jolly...	.001	.001	.001
12	A bully...	.001	ns	.001
13	Someone who is liked by all...	ns	.001	.001
14	A very lazy person..	.001	.001	.001
15	A very fair person...	.05	.01	.01
16	A nice pest...	.05	.01	.01
17	...someone to direct the play...	.001	.05	.001
18	A...child...always getting hurt...	.001	.01	.001
19	A school nurse or doctor.	.05	.01	.01
20	somebody...always late...	.01	.05	.01

*Grp I is Experimental Boys vs Control Boys (n_1=13, n_2=65)
Grp II is Experimental Girls vs Control Firls (n_1=7, n_2=66)
Grp III is Experimental Boys and Girls vs Control Boys and Girls (n_1=20, n_2=131)

Factorial Validity

Data obtained from administering the screening process to the 151 subjects was subjected to a principal axis factoring. None of the material from TAY, because of its unreliability and suspect item validity, was included. Rotated factor loadings are presented in Tables 16, 17 and 18. Twenty six of the 28 variables are included since they had at least one loading of .300 or greater, variables 1 to 8 represent the items from BRP, whilst 9 to 20 represent the items from CP.

Component I is bipolar and would seem to indicate a child with poor self-control, little idea of social expectations, one who is anxious, depressed, who has difficulty in learning and who is aggressive. He is readily contrasted on the other pole by a profile of one who is hard-working, happy, popular, and clever.

Component II is perhaps an enigma. It is essentially a general factor which, whilst it would appear to be significantly loaded towards the aggressive type, does not reflect the anxious, depressed child with learning problems noted on Component I, but rather an aggressive dominant type to whom his or her peers look up -- he is smart and seemingly revered. Type I may be seen as maybe 'immature-aggressive' whilst type II may reflect a 'dominant-aggressive' type. The third component is bipolar and would seem to indicate the rather frangible type who appears lazy, has

TABLE 16
PRINCIPAL COMPONENT I --- IMMATURE AGGRESSIVE

Variable		Loading
4	makes inappropriate responses...unpredictable	+.731
6	behaves in ways which are dangerous	+.675
1	gets into fights and quarrels	+.669
8	becomes upset or sick when faced with difficulties	+.642
7	is unhappy and depressed	+.634
3	has difficulty learning school subjects	+.579
18	often gets angry over nothing	+.454
14	a mean cruel boss	+.404
13	a girl to act as teacher	+.427
22	a very lazy person	+.430
27	a school nurse or school doctor	-.433
10	someone who is often afraid	-.522
23	a very fair person	-.539
25	someone who could direct the play	-.541
9	a true friend	-.577
21	someone who is liked by all	-.586
17	someone who is smart and knows the answers	-.616
19	someone who is jolly	-.785
5	he or she works extremely hard in learning	-.643

Percentage of total variance 25.092%

TABLE 17
PRINCIPAL COMPONENT II --- DOMINANT AGGRESSIVE

Variable		Loading
20	a bully who picks on other children	+.752
12	somebody who is stuck up	+.706
14	a cruel mean boss	+.635
15	a boy to act as team captain	+.603
18	someone who gets angry over nothing	+.575
11	a class president	+.565
17	someone who is smart and knows the answers	+.524
1	this pupil gets into fights and quarrels	+.416
24	a nice pest	+.383
25	someone who could direct the play	+.346
2	avoids having contact with classmates	-.371

Percentage of total variance 13.351%

TABLE 18

PRINCIPAL COMPONENT III --- WITHDRAWN

Variable		Loading
10	someone who is often afraid	+.449
2	...has to be coaxed to work or play... ...actively avoids having any contact...	+.380
22	a very lazy person	+.349
3	...has difficulty learning school subjects	+.345
26	a smaller younger child, often hurt	+.340
24	a nice pest	+.301
8	...becomes upset or sick when faced with school problems	+.300
20	a bully who picks on other children	-.342
14	a mean cruel boss	-.426

Percentage of total variance 7.227%

TABLE 19

FACTOR INTERCORRELATIONS

Factor	:	II	III
I	:	.00	-.48
II	:	--	.14

difficulty in learning, but is not unpopular nor aggressive, in general he is rather withdrawn.

The components clearly show two different types on the construct 'adaptive failure' and one enigmatic type, and account for over 45.67% of the total variance. Component II displays a distinct personality type, although the general factor loadings make it difficult to say whether such a component leads to a definite typology which could be classified as 'adaptive failure'. Clearly such a type is seen by the students (his peers) as a generally desirable one, whilst the teachers' opinions (variable I) of such a type seem to indicate very little beyond "he gets into fights and quarrels..."

A multiple correlation among the factors indicates that they have very little variance common to each other and consequently very little overlap. The three factors therefore represent three different types (Table 19).

Predictive Validity

Approximately three years after the initial screening the experimenter attempted to contact all twenty subjects in the experimental group and the corresponding twenty in the control group. Of the former group only eighteen were still in the Province with five still in the same town, this contrasted with the control group which still had nineteen in the Province with eleven still in the same town. Sixteen of the experimental group were seen by the experimenter together with one, or both of their parents, and information collected from that parents and tabulated on the interview schedule (Appendix E). The two subjects still available from this group who were not seen by the experimenter, were seen by colleagues, registered psychologists, in their respective towns 290 and 400 miles from Edmonton. Of the control group the experimenter was able to see fifteen whilst the remaining four were seen by colleagues with whom the experimenter had previously worked.

Data were collected pertaining to each child's educational, family, and birth history, to his language, early childhood development and his current social behavior. The data were then divided into six sections relative to each of the hypotheses $H_{3.0}$ to $H_{3.5}$, and a Chi^2 analysis conducted between the groups. A Yates correction for continuity was used between individual items so that a profile might be deduced. Since n is small $p > .10$ was examined and, where sensible, cells were combined to avoid zero frequencies. Only cells with a combined frequency of at least five have been included.

It is quite apparent from Table 19 that over half of the experimental group have reading, language and arithmetic problems; the majority have also received special help and /or have had to repeat a grade. From the data it would seem that the two groups are distinctly different, with the experimental group having significantly more educational problems than the control. $H_{3.0}$ viz "The experimental group will have a significantly greater number of educational problems than will the control group." is therefore accepted at the .0001 level.

The family histories of the two groups, whilst being apparently very different if one looks at them proportionally (e.g. five times as many of the experimental group have parents with some sort of physical disability,) show very little statistical difference. Generally the experimental group would seem to suggest a profile in which the child's father is more likely to be a manual worker, whose parents have had below average education, whose family has some history of mental illness and/or alcoholosm and/or epilepsy, whose father is frequently away from home and who comes from a significantly larger family. Overall, $H_{3.1}$ was accepted at the .01 level, viz "The family histories of the experimental and the control groups will be significantly different."

In the birth histories of the two groups it was noted that the experimental group had a significantly greater number of morbid conditions, but until several of these conditions were combined it was difficult to show this statistically. On examination, Table 20 would seem to indicate that the experimental group have been through more birth traumata than the controls but the overall statistic does not allow $H_{3.2}$viz "The birth histories of the experimental group will be significantly different from those of the controls." to be accepted.

The data obtained on infancy and early childhood development indicated that the experimental group subjects were more difficult to look after as babies, were prone to more illnesses and had difficulty with both fine motor and gross motor co-ordination. The two groups were clearly differentiated at the .001 level and $H_{3.3}$viz "The development of the experimental group during infancy and early childhood will be significantly different from that of the control group." was accepted.

The language development of the two groups would seem to support those items from the educational history that are similar. In general the experimental group were significantly less verbal than the controls, they had difficulty expressing themselves and also had difficulty remembering things. The groups were statistically different from each other at the.001 level and $H_{3.4}$ was therefore accepted, viz "The language development of the experimental group will show a significant difference to that of the controls."

Whilst the experimental group displayed a much greater proportion of behavior that could be considered as

TABLE 20

EDUCATIONAL, FAMILY AND BIRTH HISTORY

	Experimental Group (n=18)	Control Group (n=19)	p*
Educational History			
Reading problems	12	3	.01
Language problems	10	3	.01
Speech/hearing problems	6	3	ns
Arithmetic problems	10	3	.05
Repeated grade and/or received special help	13	3	.01
Overall p < .00001			
Family History			
Father absent	7	1	.05
Manual/skilled man. occupation (f)	12	6	.10
Clerical/office occupation (f)	3	6	.10
Professional (f)	3 6	6ns	ns
Mother working	7	7	ns
Low educ. level (below Gr. 9) (f)	8	4	ns
Above Gr. 8 (f)	12	15	ns
Low educ. level - mother	7	4	ns
Above Gr. 8 (m)	11	15	ns
Physical disability (f or m)	5	1	ns
History of mental illness/epilepsy/ alcholism	8	3	.05
Mean no. of siblings	3.83	1.75	.01*
Overall p < .01			
Birth History			
Miscarriages/forceps del./ Caesarian/ induced/ breach/illnesses during preg.	5	1	ns
Low birth weight (below 5 lbs.) heavy (above 9 lbs.)	7	3	ns
Duration of pregnancy abnormal (outside 34 to 38 weeks)	6	2	ns
Incubation/transfusions/breathing diff.	3	0	ns
Overall p ns			

TABLE 20 continued

EARLY CHILDHOOD HISTORY, LANGUAGE DEVELOPMENT AND CURRENT SOCIAL BEHAVIOR

	Experimental Group (n=18)	Control Group (n=19)	p*
Infancy and Early Childhood Development			
Sucking difficulties/colic/diarrhea constipation/little weight gain	7	2	.10
Many illnesses/asthma/allergies	9	2	.05
Poor gross motor development	7	1	.05
Poor fine-motor-coordination	8	2	.05
Overall $p < .01$			
Language Development			
Unable to get word out/difficulty in thinking	10	2	.01
Poor vocabulary/grammer	9	3	.10
Difficulty expressing himself	10	3	.05
Poor memory/long term/short term	9	3	.10
Overall $p < .001$			
Current Social Behavior			
Difficulty with right and wrong/ poor reality concept	7	2	ns
Behaviorally inconsistent	6	2	ns
Distractable/ hyperactive	8	2	.05
Fearful/nervous/worries/easily upset	6	1	.10
Sleeping and/or eating difficulty	7	2	ns
Enuretic/bites nails/ sucks thumb	5	3	ns
Accident prone/frequently ill	8	2	.05
Dependent/immature/poor self esteem	7	1	.05
Depressed/unhappy	6	1	.10
Irritable/destructive fights easily	8	1	.05
Hard to discipline/ has tantrums	11	3	.05
Cheeky/few friends	6	2	ns
Lazy/badly organized	8	2	.05
Difficulty with police/neighbours/ teachers	5	1	ns
Clumsy/awkward	7	1	.05
Overall $p < .0001$			

*All probabilities are calculated using Yates' correction and d.f.=1 maladaptive, frequencies were not always great enough to show statistical significance. Broadly speaking when the protocols were examined individually, it would appear that the experimental group could be divided into two types -- type one would be a child who has difficulty with what is right and what is wrong, is irritable, destructive, quick to anger, who is cheeky, has few friends, is lazy, badly organized and tends to run afoul of adults. Type two would seem to be distractible and /or hyperactive, fearful, liable to display nervous habits, has difficulty with sleeping, is fussy over food, is hard to discipline, has tantrums, is dependent and immature and is clumsy and awkward. Being depressed and/or unhappy was equally divided among the two groups. Naturally such information as was collected in this section calls for several value judgements to be made by parents, but such judgements clearly differentiate the two groups and $H_{3.5}$ viz "There will be a significantly greater number of general behavior difficulties noted amongst the experimental group than by the controls." was accepted at the .001 level.

All of the experimental group scored on more than eight of the behavior categories and one of the control (a borderline case), scored on ten of them.

In order to see if any changes might have occured in the two groups during the three years intervening between the County's first screening in December 1972 (see Table 21) and its second screening in December 1975, an analysis of variance was made on the 1975 scores. In the cases where a child had moved out of the County the cooperation of the new County was elicited. Only two children from the experimental group and one from the control group could not be located. No new figures were obtained for I.Q.

It can still be noted (Table 21) that the two groups are distinct from each other; $H_{4.0}$ viz "it is predicted that, in December 1975 the experimental group will still be significantly different from the control group in terms of teachers' marks and Iowa scores." is accepted. The difference loadings have changed however from those of 1972. Table 22 which shows the percentage increase or decrease in marks over the last three years, notes that only in work study skills has there been any decrease and that was for the control group. Significant increases in scores have appeared in reading (according to the Iowa) for the experimental group and in arithmetic for the control group. The figures however do still show that the marks obtained in 1972 successfully predict that the two groups will be statistically significantly different in 1975.

TABLE 21

ANALYSIS OF VARIANCE BETWEEN THE EXPERIMENTAL GROUP (X) AND CONTROL GROUP (Y) ON 1975 TEACHERS' RATINGS AND THE 1975 IOWA RATINGS.

Teacher Ratings *Iowa Ratings	$\bar{X}$	$\bar{Y}$	F	p
Reading	2.00	3.29	3.12	ns
Language	1.81	3.43	11.88	.005
Arithmetic	1.81	3.00	4.77	.05
Vocabulary*	1.87	3.57	6.31	.05
Reading*	1.90	3.00	3.29	ns
Work Study Skills*	2.40	3.71	5.84	.05
Arithmetic*	1.87	2.86	2.80	ns

Experimental Group n=18, Control Group n=19

TABLE 22

PERCENTAGE INCREASE/DECREASE OF TEACHER RATINGS AND IOWA RATINGS FROM 1972 to 1975

Teacher ratings	Exp. Grp. (n=18)	Con. Grp. (n=19)
Reading	+11%	+9.6%
Language	+13%	0%
Arithmetic	0%	+22%
Iowa ratings		
Vocabulary	+3.9%	0%
Reading	+26.3%	0%
Work Study Skills	+16.7%	-3.9%
Arithmetic	+3.9%	+11.3%

Since five of the six groups in Table220 are statistically different, both further contrasted group validity and predictive validity can be sensibly claimed. It would also seem, with a knowledge of certain aspects of the family history, early physical development, and language development, that both educational development and probably general social' behavior may also be predicted.

Classification

Since the usual factor-analysis technique for deriving classifications were not suitable for the data, and not wanting to miss the opportunity of perhaps finding some coherence between the variables on the parent interview protocol, which even a cursory inspection indicated, the data from Table 20 was subjected to a cluster analysis. The purpose was to compare the series of score profiles of the experimental and control groups over all of the variables, and progressively to associate them into groupings within clusters. The method used was the Hierarchical Grouping Analysis of Veldman (1967): not only were clusters of behaviors yielded but also clusters of background variables associated with such behavior. The analysis compares the profiles over the K variables and progressively associates them into optimum groupings. Tables 23 - 27 list the five main clusters found.

TABLE 23

Cluster I

Behavior	Related Background
Reading Problems Language Problems Arithmetic Problems Difficulties with right & wrong Behaviorally inconsistent Accident Prone Irritable/destructive/fights easily Hard to discipline Diffic. with authority	Manual or semi-skilled occupation (f) Father absent Mother working Father's educ. level below grade 8

2 out of 7 girls and 3 out of 11 boys had at least seven of the behaviors, plus one boy from the control group.

No variables from the birth history nor early development were part of this first cluster. The cluster seemed to indicate an aggressive child whom it was difficult for either the parents or anyone else to control. The cluster also indicated that this particular child had learning problems and very little concept of right and wrong. Only four variables from the family background were noted; the occupation of the father which was likely to be manual or semi-skilled, the working mother, low educational level of the father and the father's absence. Five of the eighteen cases in the experimental group, (two girls and three boys) plus one of the control boys, had at least seven of the twelve traits and also had more traits characteristic of this group than of any other. This particular clustering is not at all unlike the principal component I -- 'immature aggressive' and would seem to amplify the contention that such a group of children existed, quite separate from the others, in the sample of children seen.

A second clustering (Table 24) yielded a group of children which overlapped as far as learning problems were concerned, but beyond that manifested quite a different behavioral type from cluster I.

TABLE 24

Cluster II

Behavior	Related Background
Reading Problems	Family history of mental illness/epilepsy/ alcoholism
Arithmetic Problems	Miscarriages/forceps deliv./ illnesses during pregnancy/ low/heavy birth weight
Behavior inconsistent	Vegetative disorders
Poor fine motor co-ordination	Many illnesses/ allergies
Distractible/hyperactive	
lazy/badly organized	

2 out of 7 girls and 5 out of 11 boys with five out of six behaviors.

This type of child does not constitute much of a behavior problem but is quite likely to be a teaching problem. His background suggests that he is similar to children who are often labelled as a 'constitutional' or a 'minimal brain dysfunction ' type. Boys seemed at a greater risk than girls for this particular cluster: it accounted for 38.9% of the total experimental subjects; cluster I grouped 27.8% of the total subjects.

Cluster III, whilst accounting for 16.7% of the total subjects (Table 25), yielded only two particular background variables. The cluster would seem rather similar to principal component III -- 'withdrawn' whilst, at the same time appearing as a 'habit disordered' immature-group. With this particular sample, once again the vegetative disorders (sucking/colic/diarrhea/constipation/little weight gain) were preponderant.

TABLE 25

Cluster III

Behavior	Background
Fearful/nervous/worried/ easily upset Sleeping/eating difficulty Enuretic/bites nails/sucks thumb Accident prone'frequently ill Despondent/immature/poor self-esteem Depressed/unhappy	Sucking difficulties/ colic/diarrhea/little weight gain Many illnesses/allergies/asthma

2 out of 7 girls and 1 out of 11 boys manifested all five of the behaviors.

TABLE 26

Cluster IV

Behavior	Background
Language difficulty	Mother works
Speech/ hearing diffic.	Physical disability (m or f)
Poor vocabulary	Second Language
Difficulty expressing himself	
Difficulty with right and wrong	
Dependent/immature/poor self-esteem	

1 out of 11 boys and 1 out of 7 girls with six out of seven behaviors

Cluster IV shows a communicative-disorder syndrome with the possibility that the behavior difficulties come from the definite problems in understanding. An examination of the two cases showed that the boy came from a family in which both the mother and father were deaf whilst in the girl's case her mother did not speak English: the girl also was found to have a hearing loss. This particular category represented 11.1% of the total sample.

Only one more clean clustering came from the data, although it was possible to form many more groups from the analysis. Cluster V (Table 27) had one child in it, a boy. Although at first glance, the cluster may seem very similar to cluster I, it will be noted that no learning problems were related and there is only one family background factor. This particular child would seem to be strictly a conduct problem, with the possibility of being or becoming, a 'sociopath', i.e. he represented a cluster of behaviors which are frequently ascribed to the psychopathic personality. Father's absence would seem to be the main contributing factor in this particular case.

TABLE 27

Behavior	Cluster V	Background
Difficulties with right & wrong Behaviorally inconsistent Irritable/destructive/fights easily Hard to discipline Difficulty with authority		Father absent
1 out of 11 boys		

Other groupings were available, but examination of the errors associated with successive stages of grouping showed that any further reduction to another group would involve a substantially larger increase in error than had been associated with previous reductions. To find the individual subjects in the clustering an option was taken in the program to transpose the data matrix to permit a grouping of subjects, rather than variables. There were naturally subjects who could have belonged to more than one group but, in general, an examination of their profiles showed that they were closely related to the clusters into which they had been put.

No useful clustering, either of subjects nor variables, was associated with the control group since sixteen out of the nineteen tended to belong to the same group, that is one with only three or four maladaptive behaviors, group membership being determined by the possession of two or less of these behaviors. One child however formed a group unto himself which was almost identical to cluster I; beyond this nothing particular came from an analysis of the control group by the technique of clustering. This was to be expected since the clustering criterion was the possession of certain traits which were maladaptive. Naturally nearly all of the control group would be clustered together since they manifested few, if any of the maladaptive behaviors.

Table 28 shows the distribution of the clusters between the sexes, for the experimental group only. It can be seen that approximately two thirds of the group had learning problems and that the 'constitutional' disorder accounted for a large proportion of the boys and, overall, was the largest category.

TABLE 28

Cluster and Behavior		Male :	Female :	% of total
I	Dominant-aggressive-learning problem	3	2	27.8
II	Constitutional - learning problem	5	2	38.9
III	Withdrawn, habit disordered	1	2	16.7
IV	Communication disordered	1	1	11.1
V	Conduct disordered	1		5.6
		$n_b=11$	$n_g=7$	$n_{b+g}=18$

CHAPTER FOUR

CASE SAMPLES

Since the clusters from Chapter III seemed to present five different personality types within the experimental group, this chapter presents five case studies each related to a particular cluster.

Case I -- Chris

The birth history was reported as being normal except for some anaemia during pregnancy. Chris was a normal presentation and weighed 7lbs. 9 oz. His mother tried to breast feed him but was unsuccessful and he was put onto a bottle by the second day.

Although all of the developmental milestones seem to have been passed quite normally he was described as "a quiet child...who did not climb or get into mischief... he played with his toys all day by himself."

His present language is described as adequate although his mother reported that strangers have difficulty understanding what he is saying, otherwise his school work and behavior are the biggest concerns she has. Chris is described as being poor in school and seems to block any learning. He shows very little emotional response to visits to the zoo or circus, but he insists that he is enjoying himself. When frustrated he swears loudly and cries. Discipline usually involves sending him to his room or with-holding privileges but this no longer works. For several years he continually dressed up as some character he had seen on the television or as a character in one of his comics. Up until the age of four and a half he refused to answer to his own name and was called "Batman" by everyone who knew him. If he is going out to play he will still put on a cape or an old towel and be Superman, Dracula, a pirate or Zorro. His father has tried taking the cape away but Chris becomes very sullen and will not talk to anyone.

When Chris' brother was born five years ago Chris became very jealous and very withdrawn. On the day his brother came out of the hospital Chris swallowed an entire bottle of vitamin pills. When things do not go right for him he quickly becomes frustrated; "especially when he can't be first." He reportedly flies into a severe rage ("turns beet red, shakes, and his veins stand out"). Sometimes he will strike out and his parents are fearful that he might injure someone.

Chris' father is a long distance truck driver who, according to his wife is frequently away, but when he is at home he has no difficulty handling the boy. "Chris is scared of him..." When the father is at home it seems as if Chris is quiet and even withdrawn, but once he has gone away then Chris becomes almost uncontrollable. He is having difficulty with his school work and has had special help with his reading. His present teacher described him as "negativistic, can be withdrawn, needs help in most tasks, little social awareness, wild temper and quick fluctuations in mood."

Chris has been seen by a Provincial Clinic worker who, according to the child's mother, told her that there was nothing wrong with the boy and she should stop "pushing him." Family counselling was offered but the family never went back. On the day that the parent interview was held Chris was in hospital after trying to commit suicide.

Case II -- Robin

Robin is the oldest of three children (he has a brother and a sister) and has been subjected to an inordinate number of family moves because of his father's profession.

His mother reported that she was frequently nauseous whilst carrying Robin -- he eventually had to be induced because he was at least two weeks overdue. The induction took approximately twenty hours and it seems that the hospital had begun to prepare for a Caesarian when he was eventually born. It was a high forceps delivery but no scarring was noted. At the age of two days Robin ran a high fever, became jaundiced and was vomiting all of his feeds; there is also some history of both diarrhea and colic. By the age of two months he had become more settled but he did not want to be picked up and toilet training was difficult. The developmental milestones would seem to be within normal limits except for his speech -- his mother does not remember him speaking until he was two and a half. His co-ordination has never been good and even now he finds it very difficult to play games.

At school he is described as having concentration difficulties; he is distractible and, quite frequently, stops what he is doing and stares blankly. His memory is poor, possibly compounded by his poor attention and anxiety, he has visual-motor problems and is easily led. His teacher describes him as being unpredictable; "he also leaves the room without permission, makes strange noises, and chews pencils." When seen by this writer he settled down to work quite well but if all of the "I don't know" or "I can't do it" responses had been accepted then he would have scored as a mental defective. There was a certain amount of confabulation in his thinking, i.e. incorrect associations interwoven as an integral part of his immediate perceptions. e.g. "What would you do if the school caught fire?" "Close my windows in the house so that the smoke can't get in." He was very poor at abstract reasoning, misunderstood directions particularly left and right (he is left handed), and when a car back-fired outside he became very perturbed.

At home his parents have great difficulty in disciplining him. He is described as hyperactive, prone to temper-tantrums and to hitting his brother and sister. He has been seen by at least six doctors (psychologists, pediatricians, and one psychiatrist) most of whom seem to have told the parents that their child is retarded and they should relax their demands upon him.

The results of this writer's evaluations did not show that Robin was retarded -- they found that the boy possessed by café-au-lait markings: he was therefore examined by a neurologist. One of the neurocutaneous dysplasias was diagnosed, regular treatment and observation established by the neurologist, and a program to curb his maladaptive behaviors established from the home and for the school.

Case III - Anne

Anne's mother did not get married until her daughter was two years old, and then not to the girl's father. Over the last nine years six more children have been born into the family, but Anne, according to her mother, is the only problem.

No particular prenatal difficulties were reported, although the mother was only seventeen when Anne was born. The baby was a normal presentation and weighed 7 lbs. 4 oz.

Immediately the baby did not seem inclined to suck and breast feeding was impossible. For the first few months Anne was colicky and had swallowing problems, as well as bowel difficulties. She also gained weight slowly. Anne's mother described her as "always crying...could never be soothed..." and obviously she had difficulty in nurturing the child. They lived with the mother's parents for the first year or so and then she moved in with a man who was working in a nearby farm: they were married later.

Anne was a difficult baby to cuddle, had difficulty in sleeping, was frequently ill with colds, fevers, allergies etc., and did not seem to have given her mother any pleasure at all. Even now she has to sleep with a light on in her room and frequently has night terrors and/or difficulty in going to sleep. She is described as nervous, she sucks her thumb, used to rock, occasionally is enuretic, and has no friends. Anne's mother reported that the child finds it almost impossible to make up her mind about anything, is very fussy over her food and still has "a delicate stomach". If chastised she will "cry for hours;" she plays on her own and rarely initiates any conversation. Anne also hates being in the house on her own, which is difficult for her mother who works in a local shop.

Now at the age of eleven, Anne is having no particular academic problems but the other children avoid her. She frequently has to be bandaged for some accident, like walking into the wall, and is usually on her own in the school yard. Her teacher describes her as polite and "a good girl" but she has never seen her smile. No special help has been given to this child by the school, but, after the interview, an assessment was made and Anne and her parents were referred for psychiatric help.

Case IV - Kenny

Kenny had quite an uneventful birth and a normal development. No particular behavior difficulties were noted by his mother, except that he is not very assertive and seems to prefer staying at home watching the television rather than going out to play. He is one of three brothers, all of whom have been receiving special help for their poorly developed language. Kenny's teacher stated that he has difficulty expressing himself and also seems to have some speech defects. He would appear to have difficulty in finding words and in remembering them. He never volunteers anything in class but he is very good on the sports field although he denies liking games. He is popular in class but the teacher "does not know what to make of him." Kenny has had a hearing assessment and nothing abnormal was found. It would seem of importance to note however something which was not available in hospital reports nor school files -- both his mother and his father are deaf. A parent interview was possible because they both read lips well, but, at home, they frequently use sign language. Impoverished language background, from early age, could well have had a deleterious effect upon this particular family. Difficulty with right and wrong would seem to be more of a communication problem rather than a maladaptive problem, as would be the occasional temper flare-ups which his teacher reported.

Case V - Kevin

Several reports were in Kevin's file concerning defiant, recalcitrant and rude behavior - including refusal to work, swearing at teachers. walking out of school ...he has been suspended several times, punishment has failed and the school no longer knows what to do with him. His present teacher described the boy as being unmanageable, continually disrupting the classroom and a bad influence on the other children.

Very little reliable early history was obtained from Kevin's father, and his common-law wife. He was described as a good baby; the birth was "an O.K. one." but the father seemed to know very little about his son

..."I was always away driving trucks." It was reported that, as Kevin grew older, he gradually took charge of his mother and then his teachers. The father rapidly went into a tirade about government services and the helping professions in general who had spent hours assessing his child (he claims that Kevin has been examined by at least six different people) but they and "done nothing to help" him or his child. Kevin's father reported that the boy hates his real mother. He also said that he did not know what to do with the boy any more. All punishments had failed. Kevin had run away from home four times. He had been beaten, deprived, bribed, praised, locked up... he had hit the school principal, stolen money from the locker room, disrupted the local bowling alley, taken pornographic pictures to school, beaten up most of the children in his class. He never wants to do anything and he swears at anyone who tries to make him. In the neighbourhood he has stolen other children's pets, been rude to passers-by and has made a general nuisance of himself.

Whilst the boy's father is quite desperate about his position, frightened and defensive, he would appear secretly to collude with his son and strongly identify with him. "I was like that when I was his age and I did O.K." No help will be sought by the father and he refuses to listen to any school personnal nor will he take Kevin to see anyone. He has consented however to work with this writer, "as long as you get some bloody results damned quick..."

Other Cases

After the end of the parent interviews those fourteen experimental subjects, together with the boy from the control group who was showing problems, all of whom were still living in the vicinity, were seen by the writer, given psychological assessments and where necessary, were also seen by consultants. Educational and behavioral control programs were then set up. The problems found are contained in Table 29. Certain of the children are contained in more than one category. The high percentage of learning problems is of note. In all cases the learning problems had been documented by the school, alas very little special programming had been provided, although they had all received extra help. This would seem to be because of a lack of any specific diagnosis, and treatment ideas.

Of the fifteen children in Table 29, three have received operations following their referral from this study, two others are on medication, four are still under psychiatric care and all nine of the children with learning problems have received individual programming. Another child has received glasses and the same child has been treated for dental caries. Thirteen of the fifteen have also had individual programs established to help them with their problems in adapting.

TABLE 29

PROBLEMS FOUND N= 14	
Minimal neurological dysfunction	2
Seizure disorder	1
Neurocutaneous dysplasia	1
Cardiovascular	1
Urogenital disorder	1
Hearing discrimination or intergration prob.	2
Otitis media	1
Psychiatric referrals	4
Ophthalmological problems	1
Dental-orthodontic problems	1
Learning problems	9

Relation of the Clusters to the Bower Instruments

The factor analysis of A Process for the In-School Screening of Emotional Handicaps had yielded two maladaptive principal components, viz I- 'immature-aggressive' and III - 'withdrawn'. The cluster analysis of the parent interview seemed to parallel[1] the first component on clusters I and V, whilst clusters II, III and IV seemed to have something in common with principal component III. An examination of the items from the instruments A Behavior Rating of Pupils and A Class Play for the subjects contained in each of the clusters showed the two components from the factor analysis in each of their profiles. With so few subjects it was not possible however to use the Bower instruments as a classification device since those subjects in clusters I and V were seen in the same way by the teachers and by peers. No discrimination could be made between them since educational problems are not included on the Bower, except for three items which relate directly to school work. The same happened with clusters II, III and IV, with there being only small differences between the groups on the Bower instruments. The parent interview form would therefore seem more capable than the Bower instruments of being a classificatory device. Like most instruments though it is difficult to use it to classify, unless the "right" questions are asked and there might well be some classifications in the data which are not available because such questions were not asked.

CHAPTER FIVE

SUMMARY, DISCUSSIONS AND IMPLICATIONS

One hundred and fifty one Grade three subjects were put through Bower's "A Process for In-School Screening of Emotionally Handicapped Pupils" and thirteen boys and seven girls were 'screened-out'as being 'at-risk' as adaptive failures, using a score of one or more standard deviations above the mean on at least two instruments as the criterion. This represents 16.46% of the boys, 9.72% of the girls, and an overall figure of 13.25%.

Test-retest reliability coefficients and reliability indices suggested that each of the three instruments was sufficiently reliable to warrent further investigation.

Contrasted group validity was claimed on the teacher rating scale - A Behavior Rating of Pupils, and and on the peer scale - A Class Play, but not on the self-rating scale - Thinking About Yourself. Since there was no statistically significant difference between the means of the control group and the total sample, minus the experimental group it was taken that the controls were representative of the total sample.

Further contrasted group validity was claimed when comparing the groups on various educational criteria, namely teachers' marks in language and reading, Iowa marks in vocabulary, reading and work study skills, and on Lorge-Thorndike Verbal and Non-Verbal scores. No significant difference was found between the groups when comparing the marks given by the teachers in arithmetic, nor by the Iowa in arithmetic, nor was there any significant difference in ages.

In the item validity study all items in A Behavior Rating of Pupils significantly discriminated between the two groups, although item 2) lent little to the process and item 5) was correlated negatively with all of the other variables. Three of the items, viz. 1), 4) and 6) indicated a definite sex difference between the boys and the girls in the general sample, whilst only item 7) showed any difference between the experimental samples.

The item validity study on the instrument Thinking About Yourself showed than only nine items (22.5%) discriminated at a statistically significant level between the two groups, whilst eight items discriminated between the boys' groups and fifteen between the girls' groups. The means for the experimental and the total sample were found to differ significantly, suggesting that the total score might be a usable criterion for screening, although its use is presently doubted.

On examination of a Class Play for item validity, seventeen of the twenty roles significantly discriminated between the two groups, two other roles were sex-specific and, as such, also discriminated between the two groups. Only item 2) "someone who is often afraid and who acts like a little boy or girl" and item 3) "someone who is liked by everybody and who tries to help everybody" did not discriminate between the two groups of boys, and only item 2) did not discriminate between the experimental and the control group when the two sex-specific roles were taken away.

Factorial validity yielded the possibility of the data containing three distinct types, namely an 'immature-aggressive' type who is definitely failing to adapt, a 'dominant-aggressive' type who appears to be adapting, even though at first glance his behavior would appear to be maladaptive, and a third type who appears to be 'withdrawn' and has learning problems.

Predictive validity was examined by comparing nineteen of the experimental sample who were still available to the study, with eighteen of the original control group three years after the initial screening, on the assumption that between group differences would exist and that these differences would provide predictive factors which might be generalized to other groups. Data taken from structured parent interview protocols showed four generalized factors; namely 1) educational difficulties especially reading, language and arithmetic problems, and the necessity to repeat a grade and/or receive special help, 2) family history, especially father's occupation , family history of mental illness/epilepsy/ alcoholism/father's absence, and the number of children, 3) certain early developmental problems, many illnesses, sucking difficulties, colic, diarrhea, and gross and/or fine motor-co-ordination, and 4) language problems -- thinking difficulties, poor vocabulary/grammer, difficulty with expression, poor memory long term/short term.

Current social behavior showed significant contrasted group validity on such items as hyperactivity, accident and/or illness proneness, depression, destructiveness, hostility,discipline problems, tantrums, laziness, motor control, inability to organize oneself, dependancy, immaturity, self-esteem and fear. It also showed that the screening of 1972 was a good predictor of later maladaptive behavior.

No significant statistical difference could be shown on any of the prenatal or obstetric variables.

Further predictive validity was found when comparing teacher scores and Iowa scores given in 1972 with those given in 1975. Although the two groups were still distinctly different, the scores in reading and language had increased for the experimental group (teacher ratings) and also in all aspects of the Iowa (vocabulary, reading, work study skills, arithmetic). Increases were noted in the control group for arithmetic and reading (teacher ratings) and in arithmetic on the Iowa. The only decrease in either group was small, and occurred in work study skills for the control group. The very significant increases were in reading and work study skills for the experimental group and in arithmetic for the control group. A difference in reading scores in 1972 could no longer be considered as a predictor, but differences in language (teacher rating), vocabulary and work study skills could.

A cluster analysis, based on the information dervived from the parent interview, gave five reasonably error-free groups which could be used as a basis for a rudimentary classificatory system. The groups were 1)an immature-aggressive cluster with learning problems and a generally impoverished background, with mother working and father absent, 2) a constitutional type with learning problems and with congenital and/or familial problems, 3) a withdrawn, depressed, habit-disordered child, prone to accidents and illnesses with a history of vegetative problems, 4) a communication-disordered child with adaptation difficulties coming from poor socialization skills, parental disabilities or poor language at home, and 5) a conduct-disordered, perhaps 'sociopathic' group with no learning problems, and only "father-absence" clustering as a contributing variable. One of the control group clustered in the first group, but otherwise there was no significant grouping amongst the controls. This was to be expected since the groupings were made on the evidence of maladaptive behaviors. The differentiation made between Clusters I and V, and Cluster IV as a unique syndrome, would seem to be peculiar to this study.

The fourfold problem of the thesis (Chapter 2), upon investigation, indicated that the Process for the In-School Screening of Children with Emotional Handicaps did, in general, reliably and validly screen-out children whose behavior is maladaptive. Two definite types of maladaption were noted from the Bower instruments, and those children considered 'at-risk' in 1972 were still 'at-risk' in 1975; there were also significant epidemiological differences between these children and those who were not screened-out, differences significant enough to allow for five distinct clusterings or classifications.

Discussion

Based on the preceding analysis, it is believed that two of the three instruments used in the screening process are reliable and valid and can be used with confidence to discriminate between those children who are adapting well and those who are not. The instruments are the teacher rating scale and the peer rating scale.

Like Maes (1966) and Lambert and Bower (1961), it must be reported that the self rating was rather weak.

Item 2) of the teacher rating scale, since it added little to the overall results, could be omitted and the scoring system for item 5) could be completely reversed, or even omitted. Definite sex differences were noted on three items: the finding that the boys tended to fight and quarrel more than the girls, were less predictable, and were also more likely to behave in ways that are dangerous, were general to the total sample. Maybe one should be looking at the intensity and frequency in such items rather then whether or not they occur before boys are screened-out on what may be essentially age or socio-specific items.

Another interesting result was that, for the experimental group, unlike the total sample, there was only one item which showed a sex difference. This was item 7) "this pupil is unhappy or depressed. He or she may cry easily, be inattentive, or daydream." Upon inspection, the mean score for the girls' group was higher on this item. There were few girls in the experimental group but it would seem that such as there were, were just as likely to fight and quarrel, have problems in school work, withdraw, be unpredictible, act in dangerous ways or be sick when faced with a difficult situation as were the boys.

Such results would seem to be contrary to the general findings or any major study. For example Wolff (1967) and Rutter, Tizard and Graham (1970) reported a 1:3 ratio between the conduct and neurotic disorders when contrasting boys and girls. The only study which seems to come close is that of Leslie (1974) who found that two out of three girls could be classified in the same way as the boys, although Kolvin et al, (1975) did not find sex differences in acting-out behavior but did in neuroticism and withdrawal. His sample, however, consisted of five year olds. Stott (1975) in Canada found totally different results, with hostility, withdrawal and almost every other type of maladaptive behavior, finding a larger prevalence amongst boys. The only behavior in which girls recorded higher scores than the boys in Stott's study was in 'attention-seeking' (talking, over friendly manner). Boisterous and disruptive forms of attention-seeking were more characteristic of the boys (ibid, p.1). The higher prevalance of depression or the like (item 7) amongst girls in the present study is contrasted sharply with Stott (1975), who shows a 2:1 ratio for boys over girls on this particular factor.

Obviously some of the discrepancies between the results of different studies are based on the instrument used. This particular instrument (BRP) whilst, on the surface, it has screened-out children who can be considered 'at-risk' as adaptive failures, is very difficult to use as a classificatory device. This is because some of the items, instead of containing one specific piece of behavior which can be observed in context (like Stott's Bristol Social Adjustment Guides), contain several pieces of behavior. Examples of this are item 6) "this pupil behaves in ways which are dangerous to self or others. This pupil will get into situations in which he or she may be hurt or frightened," and item 7) "this pupil is unhappy or depressed. He or she may cry easily, be inattentive, or daydream." Such items group together behaviors which may or may not be related. Surprisingly though, the instrument was reliable and valid. If one does take out items 2) and 5) and also is able to break down items 6) and 7) into something more discriminating, then this short, forced-choice instrument is clearly a useful screening device on its own. If it had been the only instrument used, 90% of the target population would still have been selected.

The usefulness of A Class Play, the peer rating, has already been documented by Zax, Cowen et al, (1964) and Stennett (1966). The only two items that did not discriminate between the experimental and the control group were role 2) "someone who is often afraid and acts like a little boy or girl" and role 13) "someone who is liked by everybody and who tries to help everybody." Interestingly, both of these items, like several others, contain what could be considered as two different behavior descriptions, and could have caused confusion. On the other hand the children could have been responding to a general idea. Item 2) did not seem to discriminate between groups and many of the experimental group seemed to be liked and/or tried to help everybody. Whatever the case, peer judgements on this particular instrument were found to be both reliable and valid. As in BRP, if this had been the only instrument used, 90% of the target group would still have been screened-out.

Since it is conceivable that the small number of discriminating items on the self-rating (TAY) might have occured by chance, it is suggested that no special weight be given to individual items. Until further validity studies can be conducted to determine whether individual scores have predictive value, the use of this particular instrument is seriously questioned. Lambert (1962) came to the same conclusion: "further research designed to test the predictive validity ... is needed to determine whether or not it should continue as part of the screening battery.

The actual incidence figures (16.46% of the boys, 9.72% of the girls and 13.25% of the total population) are hard to compare with those of other studies.

Although the results of the parent interviews indicate that all of the screened-out sample are having problems with adapting, it can also be assumed that there might be several border-line cases who could also be having the same type of problems, particularly as one of the control group (who was a border-line case) was having quite severe difficulties. The figures can therefore be taken as indicating the minimum percentage who require special help in adaptation: they compare favorably with those obtained by Leslie (1974), viz. 15.7% of the boys, 9.5% of the girls and 13.21% overall. She also divided her sample into 'severe' and 'moderate' categories, obtaining 4.4% and 17.2% respectively (these categories show degrees of disorders similar to children already attending psychiatric clinics in Manchester). Stott's (1975) figures, obtained in Eastern Canada with his own instruments, yielded 11.72%, 7.41% and 9.64% respectively. Like almost every other study the boys outnumbered the girls approximately two to one.

The first of the three factors found, the 'immature-aggressive' would seem to be similar in form, but not in content, to that found in all factor or principal component analyses in terms of acting-out or anti-social factors, especially that of Kolvin et al., (1975). The second factor, 'dominant-aggressive' whilst containing several of the same variables cited in other studies (e.g. Rutter, 1970; Stott, 1975) really does not seem to be as deleterious to development as some of the variables, taken in isolation, would at first seem to indicate. Rather, taking peer judgements and overall teacher ratings into account, such a child would appear to be adapting rather well. Once again this finding points to the fact that only too often one is likely to look at certain behaviors in isolation, without considering their intensity and frequency nor the resulting interaction with peers nor the consequences for the child himself. The third factor 'withdrawn' would seem to be akin to that found in nearly all factor analytic studies of maladaptive behavior, especially those of Stott (1975) and Kolvin (1975).

The finding from the parent interviews were illuminating. Sixty per cent of the experimental group had reading problems, 50% had language problems, 50% had arithmetic problems and 65% of the total group had received special help and/or repeated a Grade. The close relationship between reading problems, arithmetic problems and emotional adjustment has been well documented (Ruben 1966; Rosen, 1967) as has the relationship between I.Q. and emotional adjustment (Coleman and Rasof, 1963; Wolman, 1972), although Shimota (1964) found no I.Q. differences, but his experimental group was seventy four 14-year old institutionalized children. It is also difficult to look at reading and arithmetic problems without other considerations, social class, father's occupation, family educational level for example.

At the risk of oversimplifying, it would seem that problems in arithmetic and reading, could come from various aetiological sources, for example as a function of maturational lag, constitutionally determined patterns of disturbed neurological organizations, minimal brain dysfunction or intrapsychic and external psychological conflict. Support for postulating causal relationships comes from studies by Fendrick and Bond (1936), who found a strong connection between juvenile deliquency and reading problems, and by Gates and Bond (1936) who, after evaluating 100 reading disability cases, found that 75% of the cases showed personality maladjustment. The latter authors raised the point that 25% of these cases were probably a result of the reading problem. Richman (1967) indicated that 31% of the pupils entering the Pittsburgh Public Schools were suspected of having perceptual-motor dysfunction or minimal brain damage, whilst Stott (1975) cited 24% of his sample of maladjusted children as being suspected of the same thing. It would seem therefore that dysfunctions of this magnitude would necessarily account for a proportion of the children who are experiencing difficulties with their school work.

Language problems, for the experimental group, would seem to be of particular interest. The development of language is generally considered to provide a child with a broader scope in dealing with reality as compared to direct action alone, and provides the basis for more intelligent behavior. Language, as it develops, permits an even greater extension of the child's intellectual capabilities and provides a symbolic medium for thought. If this medium is impaired, or if expressing oneself is difficult, then it can be expected that the child will also have some difficulty with reality and understanding what is expected of him. Generalizations from one task to another will not be possible until mastery at the earlier level is achieved. Such a child would seem to be very vulnerable to having difficulty not only with other school subjects, but also to developing modes of behavior that are not adaptive.

The data on the family history shows that only three variables reached significance. They were a family history of mental illness, epilepsy and alcoholism, family size, and father's absence. The former has received a lot of attention. Specific problems acquired by individuals cannot be inherited by their offspring, but what a child may inherit is a potential for behaving in a certain way - a predisposition. There are of course certain disorders which are caused by abnormal genes, epiloia being an example, but most of the literature seems to center on schizophrenia and the relation between schizophrenic parents and their children. Heston (1966) has shown not only an excess of schizophrenia in the children of schizophrenic mothers (11% versus none in the control group), but also an excess of antisocial behavior (15% convicted of a felony versus 4% of the control children). Some of the most useful data on family morbidity has come from Jenkins (1966). He found that parental characteristics of his sub-sample of "hyperactive-distractible" children to be mainly maternal rejection in infancy (37%) and natural father not regularly in the home (34%) or alcoholic (16). In his "undomesticated group", characterized by tantrums, sullenness and negativism, the parental characteristics were maternal rejection (55%), unstable mother unable to relate self to responsibility (38%), father not regularly in the home (38%) and alcoholic father (195). For the third group, the "socialized-delinquent" the onus switched dramatically to the fathers; maternal rejection (25%) was cited but this was overshadowed by fathers not regularly in the home (53%), father as an alcoholic (42%), and almost paralleled by "father dead" (23%).

The data of this present study is open to many interpretations. It is known that if there is a family history of epilepsy, for example them the offspring are more susceptible to epilepsy or minimal brain dysfunction. It is also known that such children are more likely to have learning problems and it is also accepted by the law of multiple impairment, that such children are more prone to adjustment problems. Being brought up in a family where there is a disruption, for example of psychiatric patient or an alcoholic, can predispose a child to problems which, if not tackled, can grow into maladaptive behavior -- he may even learn maladaptive behavior from his models.

From the Jenkins' study, and from others like it. the absence of the fathers would seem to be of particular seriousness. Hetherington (1966) relates early father-absence to a low level of independence and assertiveness in peer relations whilst Santock (1970) says that in families where the father is absent the children to have feelings of inferiority and mistrust others. One of the people who has spent many years investigating this particular phenomenon is Biller. Amongst his most recent finding is that children who are paternally deprived are more likely to be insecure in their basic sex-role orientations, and take either a defensive posture of rigid adherence to cultural sex-role standards, or attempt to avoid gender-related behavior (1974). Almost every study lends something different to the picture; when the father is absent the child is more likely to function poorly in his academic work (David, 1974), or be anti-social (Siegman, 1966). It is difficult to say what a father's absence generally means -- in this study such a father was essentially in the manual-occupation class (usually oil field workers or truck drivers). This of course was the preponderant group in the experimental sample, but it was also the group from which the child who was having school difficulties, and discipline problems came.

The studies which have shown that the diagnosed rate of psychiatric disorders is significantly related to social class, for example Freedman and Hollingshead, (1957), Hollingshead and Redlich (1955) or Pringle et al., (1966) who used the Bristol Social Adjustment Guides in the British National Child Development Study, were not supported in this study. The finding is in consonance with that of Bower (1969), and even Stott (1975) who in Canada, found only very small socio-class differences. Naturally, socio-class variables, as well as parent education variables, can have a profound influence on a child's comparative behavior. That they did not in this study indicates that maladaptive behavior, as measured by these particular instruments, could be independent of either variable, but it would be of interest to take a larger sampling before such a statement is made.

Failure to find anything significant in the birth histories, even when categories had been collapsed, was surprising, and contradicted most of the classic studies. Proportionally, the experimental group was more likely to have difficulties in this area, but such difficulties did not reach statistical significance.

Very different results were found in the category of infancy and early childhood development. In particular the proneness of the experimental group to many illnesses and allergies, to poor gross-motor development and to poor fine-motor co-ordination, would seem of importance, at least statistically. In an earlier study by Stott (1966) of 818 maladjusted boys, 31% had some respiratory ailment and 25% had some other ailment. In another study, Drillien (1964) found that girls who were suffering from ill-health were far more maladjusted than the corresponding group of boys but, in general, boys tended to be less healthy than the girls. In 1975 Stott stated

> ....a somatic basis for the behavioral system lies in the nervous structures which govern behavior. In short, the consistent maladjustment/sickness relationship points to the existence of a neurological basis for s significant number of cases of behavior disturbance (p. 107).

The reason for ill-health of children involved in the present study is open to speculation. Figures showed no real difference between the boys and the girls and, statistically, social disadvantage did not seem to be a factor. There may well be a relationship between the vegetative disorders noted as the first variable in this section (viz. sucking difficulties, colic, diarrhea, constipation, little weight gain) since all seven of the subjects who scored on this variable also scored on the one containing "many illnesses, asthma and/or allergies." Such a relationship exemplifies the idea of multiple impairment and can be further augumented when it is noted that no different subjects accounted for the figures obtained under the next variable "poor gross motor development" and almost the same children also accounted for the total under "poor fine-motor co-ordination". On the whole it would seem as if this category is really only pertinent to approximately 50% of the experimental group, but, if a subject scores on one variable in the category, he is very likely to score on the others. That 50% of the present experimental group were prone to ill-health would seem to be an important finding, and naturally leads to the question, are any of this subgroup evincing maladaptive behaviors because they are ill?

Distractibility and hyperactivity, as behaviors, are frequently correlated with poor fine-motor co-ordination (Eisenberg, 1961; Strauss and Kephart, 1955; Rosner, 1969) and with either constitutional disorders of minimal neurological dysfunction. These two variables accounted for the main factor in the Dielman et al. (1972) study of 362 American grade school children. Frequently the two variables are related to various physical traumata at birth, or to prenatal factors. In the present study, since birth factors were not statistically significant overall, then there may well be some other reason. They may indicate, as does Stott (1975), that these variables are resultants, rather than fundamental traits. They may represent a life-style built up to avoid recall of traumatic events akin to Stott's "substitutive avoidance hyperactivity", or may be prevalent because the child is anxious since he is not understanding what is happening in the classroom - this would be particularly so if the child has a language or other communication problem.

Ill health has already been covered but there were two cases of accident proneness. In the literature this is generally looked upon as a symbolic-suicide, either as an escape from an intolerable situation, or for secondary gain. One of the two subjects actually was in hospital at the time of the follow-up study, having attempted to kill himself.

Of the current social behavior that was considered maladaptive the main difficulties were distractibility, hyperactivity, accident and illness proneness, discipline, hostility, fighting, laziness, poor organization and co-ordination.

Hostility, fighting and discipline problems were not as high as the teacher rating scale indicated but, at 61%, it was the most frequently reported variable-combination. Five of the subjects were flouting parental authority whilst another was described as "dangerous" by his mother. These variables are well documented as maladaptive behaviors (Peterson, 1966; Rutter, 1970; Leslie, 1974; Kolvin, 1975) but Danziger (1971) cautions the penchant that social scientists have for labelling such children "...the individual who is seem as being more assertive then the situation warrents is labelled "aggressive" as though the aggressiveness resided in him and not in our relationship (p. 169)".

Poorly organized children, often thought of as lazy, are frequently found amongst populations of so called learning-disabled children (Lerner, 1971). They are also prevalent amongst children with minimal neurological dysfunction (Rosen, 1967; Bower, 1969), and children with communication disorders (Rabinovitch, 1968). Generally speaking these children are not organized because they do not know how; on the other hand poor organization and laziness can be symptoms of illness or even defences against having to participate in activities which can induce anxiety. In the present sample all of the subjects described on this variable have educational problems and five of the eight were described as "clumsy and awkward" which might justify diagnoses such as maturational lag, constitutional problems or minimal neurological dysfunction, depending upon the other factors involved.

Rather interesting results were obtained from the follow-up study. The two groups were still distinctly different after three intervening years, but the differences (only looked at in terms of academic traits) had changed on certain variables. In those three years 72% (from Table 20) of the experimental group had received some kind of special help, as compared to 11% of the controls. Both groups had increased their reading ability according to the teacher's marks (+11% experimental, +9.6% controls) but, according to the Iowa, the experimental group had made a very significant increase in the reading section (26.3%); the controls showed no increase (0%). Such a discrepancy might well be due to a type of "halo" effect -- however one can only speculate. Morris (1960) had shown such children are more likely to get worse in their reading ability and this has been supported by Lunzer (1960).

In 1975, arithmetic scores significantly separated the two groups, whereas in 1972 they had not (on teacher ratings); this may be accounted for by noting that the mean arithmetic scores for 1975 showed no increase from 1972 for the experimental group, but the controls showed a 16% increase (teacher ratings). It can be postulated that, as the experimental group moves further through the grades, they are even more likely to fall behind the other children in arithmetic and the possibility that the "under-achiever-emotionally handicapped" syndrome of Bower et al., (1958) will become a reality is increased. No significant difference was noted on a comparison of means on the Iowa arithmetic variable, but certainly the difference between the means in 1975 was greater for that of 1972.

The larger differences in arithmetic achievement between the experimental and the control groups may be due in part to the reading difficulties the child might be having on grade 6 arithmetic. It is also possible that arithmetic is more abstract and less meaningful to the experimental group since the distractibility-hyperactivity, or communication disordered types, for example, who comprise a significant proportion of this group, are naturally going to have difficulty concentrating and understanding. Bower (1969) states "the learning of mathematics in general may require a greater freedom from anxiety and inner concern ... (p. 59)." Jastak (1946) found that the neurotic and disorganized child usually is better at reading than he is at arithmetic. Jastak also found that failure in arithmetic and failure in reading, in the same child, may be caused by factors which are totally unrelated.

Language skills scores showed a significant increase for the experimental group (teacher ratings) but this group was already a long way behind the controls and therefore improvement would be much easier to see. A difference in vocabulary scores (Iowa ratings) still significantly demarcated the two groups but there did seem to be some improvement for the experimentals (3.9%). The difference in the mean scores for the work study skills, taken from the Iowa, were expected in 1972

($p<.005$), but, although the means were still significantly different in 1975 ($p<.05$), the experimental group shared a 26.3% increase whilst the control showed a 3.9% decrease. Such an increase, whether it be solely the result of being in school for another three years or not, is encouraging.

On the whole, the results seem to support those of Stennett (1966), that children screened out some years earlier by the Bower instruments will still be having difficulty three grades later, and contradicts the hypothesis that many learning problems are developmental.

The differences in mean I.Q. for the groups (93,70 versus 114.85) and consequently Mental Age, would naturally account for some of the achievement differences between them: they show an even greater discrepancy than did Bower (1969) -- 92.9 compared to 103.2, although different tests were used. It has been well documented (Goldfarb, 1947; Sontag, 1955) that anxiety can be devastating to I.Q. performance, as can social background (Skodak, 1943), the absence of father (Davids, 1974), motivation (Bower, 1969) or any other of a number of factors including language, auditory, neurological or visual disorders. The tendency to isolate intellect as an independent trait may be an artifact of designing tests which create the trait. Adaptive factors however will aid the scores of a particular child and also abet the 'accuracy' of the test. Maladaptive factors will become strong obscurers of the child's real ability. It would have been interesting to have made a comparison between the 1972 scores and 1975 scores, if they had been available. Such a comparison would perhaps have given further credence to Bills (1951) whose longitufinal study, over 13 years, showed some significant changes in I.Q. Both increases and decreases were found and Bills noted that children who had had the opportunity for successful mastery of problems and reasonable competitiveness, and who had obtained positive feedback for their efforts, tended to perform progressively better. He concluded by stating that such satisfactions and anticipation of success should produce a lower level of test anxiety and consequently a higher score.

The hierarchical group analysis, which yielded five clusters, did not have enough subjects (n=18) for definitive remarks to be made apropos classification. But the discovery of such groups may be significant in disclosing or confirming the existence of five differentable core types of maladaptive behavior. For example, although two of the groups (cluster I and cluster V) would seem to meet Rutter's (1970) criteria for "conduct-disorder", in the present study they seemed to be two separate groups --they both manifested conduct problems and they both had "father's absence' is common but cluster I had significant learning problems and also an impoverished background --this was not at all so in cluster V. In a similar vein, cluster II had significant learning problems, but the cluster was completely different from cluster I since it centered on distractibility/hyperactivity dimensions, rather than aggressive conduct: the background variables were also completely different. Cluster IV was a definite case of communication difficulties, whilst cluster III showed an 'immature-withdrawn''habit-disordered' type of child.

These five groups are not dissimilar to those found by Jenkins (1966), although he was not able to take educational factors into account. A comparison table between the present study, Jenkins (1966) and Stott (1975) is of interest.

Both Jenkins and Stott did find other groupings, but there were a surprising number of groupings and variables in common with the present study. Other studies (Quay, 1964; Connors, 1970; Kolvin, 1975), using factor analytic techniques on behavior questionnaires, have found groups similar to Clusters V, III and II of this study. As far as it is known, there does not seem to be any evidence of a particular group of children having difficulties adapting because of communication problems, nor any studies which have made a differentiation between

TABLE 30

A COMPARISON OF CLASSIFICATIONS

Title or Classification	Behavior	Background
I - Dominant-aggressive, learning problems (This study)	Learning difficulty Behaviorally inconsistent Accident prone Irritable/destructive/ fights/ easily/hard to discipline. Difficulty with authority	Impoverished home Father absent.
I - Undomesticated (Jenkins)	Negativistic/defiance of authority. Vengeful/ Temper outbursts	Maternal rejection Father absent.
I - Hostility (Stott)	Resentful/unco-operative/ squabbles/temper outbursts/ Insulting/rude/inconsistent/ moody	

TABLE 30 continued

Title or Classification	Behavior	Background
II - Constitutional & learning problems (This study)	Learning difficulty Behavior inconsistent Poor co-ordination especially fine motor. Distractible/hyperactive/lazy/badly organized	Family pathology. especially mental illness, epilepsy, alcoholism. Birth traumata Many illnesses/allergies
II - Hyperactive (Jenkins)	Hyperactivity/lack of concentration/mischieviousness/overdependent/bashful	Maternal rejection in early infancy Father absent
II - Neurological (Stott)	Easily confused/aimless movements/restlessness/nervous habits.	

TABLE 30 continued

Title or Classification	Behavior	Background
III - Immature, habit disordered (This study)	Fearful/nervous/worries/ easily upset. Sleeping & eating diffic. Enuretic/bites nails/ sucks thumb/ frequently ill, accident prone Despondent/immature/ poor self esteem/ depressed/unhappy	Sucking difficulties/ colic/diarrhea/ constipation/ little weight gain. Many illnesses/ allergies, asthma
III - Overanxious-Neurotic (Jenkins)	Fears/sleep disturbances/ cries easily/nervous/ overimaginative. Marked inferiority feeling	History of prolonged illness or repeated illnesses. Neurotic mother (nervous, compulsive)
IV - Communication disordered (This study)	Language problems/poor vocabulary/difficulty with right and wrong/ dependent/ immature/ poor self esteem	Physical disability of mother or father Second language

TABLE 30 continued

Title or Classification	Behavior	Background
V - Conduct disorder-sociopathic (This study)	Difficulties with right and wrong/behaviorally inconsistent/irritable/destructive/fights easily/hard to discipline/ Difficulty with authority	Father absent
V - Socialized Delinquent (Jenkins)	Defiant of authority/running away/truancy/stealing/rudeness	Father absent alcoholism Irregular home life.
V - Non-syndromic overreaction (Stott)	Norm violation/stealing/truancy/destructiveness/bad peer relations	

those children who have conduct disorders combined with learning problems, and those children who have conduct disorders which are 'sociopathic'. Stott (1975) abandoned the latter idea since, from his study, the "behavior did not hold together as a taxonomic category (p. 39)." Before the five clusters can be proferred as a classificatory system it would seem sensible to make the parent interview schedule as exhaustive as possible and, like Stott and particularly Jenkins, have samples of at least several hundred maladaptive children.

Implications

In this particular school district, which may be no better nor worse than any other, there are at least 13.9% (including one of the controls) of the Grade VI population who exhibit enough maladaptive behaviors for their teachers, and peers to signal them out from the rest of the group. Upon examination, all of the parents of these children are worried about what they, as parents, should be doing, and what will happen to their child. Presumably this 13.9% have been manifesting maladaptive behaviors for at least three years, but what has the school been able to do about it? Up to the most recent re-evaluation of these children, at the end of 1975 and the beginning of 1976, four of them had been referred to a Provincial Clinic, one to an audiologist and thirteen of them had received extra help (or had repeated a Grade) in the academic subjects. School counsellors, principals, special teachers, all had had some contact with these children but no diagnoses pertinent to proper programming had been made by either the school or the Clinic. Presumably some of the special remedial help had been useful in several cases (at least this is what the data showed) but, since they were all still exhibiting maladaptive behavior, it is difficult to say how much use any other interventions had been.

If such children can be identified at least three years earlier than Grade VI, as shown by this study, why have there not been some significant changes for the better in the adaptive behavior of the children? Like Bower, it is easy to become frustrated with the notion that children are homunculus-like shrunken adults, and that helping them is a matter of providing adult-like services, but with reduced dosage. "If therapy is what adults get when they have problems, then therapy is what children get when they have problems (Bower, 1968, p. 112)."

The main implication of this study would seem to be that even though a sizeable proportion of the school population might be evincing maladaptive behaviors, very little is being done to help them. On the other hand it might be argued that these children have been helped, but the type of help received has not been sufficient or or appropriate. The data have shown that such children can be spotted quite early, even by an instrument which contains the sort of inconsistencies that the one of Eli Bower has.

In general, educational improvement is unlikely to occur until behavioral improvement (such as attention), has been obtained. What is needed is a diagnositic technique which not only indicates whether or not the child's behavior is maladaptive, but also indicates very clearly what specific behaviors are a source of concern and need to be altered if the pupil is to adjust to the school situation. Such a technique would do more than classify, it would indicate, at least, areas for remediation and also, ideally, appropriate techniques for remediation. Since behavior cannot be deemed morbid without some knowledge of its frequency, intensity, duration, and association with other forms of behavior, and the setting in which it occurs, an instrument like that of Bower would not be suitable. For parsimony, different words cannot be used for the same behavior and, whenever possible, the personal attitude of the speaker should not be a confounding variable. The Bower instrument invites teachers to decide whether a child is 'fighting' or 'quarrelling,' being 'inappropriate' or 'unpredictable", 'unhappy' or 'depressed', 'inattentive' or daydreaming' etc. To admit such emotionally, or morally charged descriptions is to invite 'halo' effect. It is not the actual behavior, but the interpretations of the observers which are then being related statistically to each other.

One way out of the dilemma would be to use a behavioral questionnaire, which has been found reliable and valid for its proper purpose, viz. a screening device, to define a sub-sample of children who are maladaptive. Once this is done the ideas expressed above could be incorporated into the development of a new device. This would be essentially a behavior frequency counting technique in which each of the screened-out children are observed for a period of time which is broken down into sub-units or cells, during which behaviors are noted as occuring or not occuring. Since children's behavior in the classroom is greatly influenced by the situation, it would be prudent to sample either all of the situations or one in particular (e.g. seatwork). From such an analysis, a cataloging of adaptive and maladaptive behaviors would come which would be directly pertinent to programming. Further analyses during and after programming will permit rapid and meaningful assessment of a child's progress, behaviorally and academically, so that adjustments in the program may be made as required.

Research on classroom behavior styles of teachers has suggested that teachable techniques can be delineated for facilitating improved classroom behavior. The research has also suggested that with these techniques the maladaptive child can often be managed in the regular class. Since we have not yet reached the point where we can confidently distinguish between a child whose maladaptive behavior will persist, and one who will "spontaneously" improve, the emphasis for educational intervention perhaps should be placed on eliminating concrete observable behavior of immediate concern and remediating the frequently concomitant academic learning problems, rather than on the more ambitious restructuring of the child's personality.

It is of particular importance of educators that recent learning theory research has shifted from the use of conditioning to influence an individual child's behavior, to the application of operant principles of the entire classroom. The future of early identification of maladaptive children must be in the development of school programs which can remediate or strengthen functioning deficiencies in children, and a psycho-educational system of gathering information about pupils -- a behavioristic model could be an answer. If specific school tasks can be conceptualized, described and operationalized, and if the same can be done with the skills children require to function in school and the spedific learning experiences which they need, then surely this could lead to a new teacher training or mental health program. Such a program would contain elements designed to enable the trainee to recognize behavior, to analyze the behavior and its antecedents, and to set behavioral limits. It should also show the trainee how behavior can be changed. The learning tasks and whatever a child is asked to do, could be analyzed in the same way. Naturally subjects like 'individual differences' and 'understanding children's feelings' would be important -- but a topic such as helping children cope with feelings could be of paramount importance, and is not at all antithetical to the behavioristic view point. After all, the establishing of the relationship and the development of expectations which can come from helping the child cope with his inner turmoil can be major positive reinforcers. Once the trainee has an understanding of what he is asking children to do, and the mechanics of his own behavior as a reinforcer, then surely there is then a basis for learning how to present a lesson and what to teach, particularly what micro-teaching is all about. Unless these things go together them both the child and the trainee are suffering.

The research showing the importance of parental influences upon the child has suggested the need for a more encompassing intervention program, rather than reliance upon a single point of attack. Congenital influences are well documented, but too frequently parents will go to their doctor only after problems have become serious, and even then the 'help' they are given is frequently questionable, unless a referral is made to a reputable agent, such as a reputable psychiatrist. Application of a modified version of the ecological model to the schools and the mental health services, and perhaps training in behavioral mamagement and understanding for parents would seem very necessary. Such an approach would require that the schools view the maladaptive child as being more than their customary nine to three-thirty responsibility. This broader concept of accountability of special education in the socialization of maladaptive children has to be accepted if one is to integrate any of the services available. It also has to be accepted the other way too --other services have to pay more attention to the school (a place in which the child spends half of his waking hours) and not 'treat' the child in isolation.

The miniaturization of children's problems and services from adult problems and services would not seem to be the answer. The idea that adults receive counselling when troubled, therefore that is what children must have when they are troubled, can frequently be more of an exercise in abstersion for the counsellor's conscience, than an agent geared towards behavioral change. But change is possible, and there are many different paths to successful intervention. From the present study it is evident that what is clearly needed is a comprehensive conceptual framework based on the principles of teaching and learning, from which effective and efficient strategies for the classroom management and the acquisition of adaptive skills logically follow. Without this, teachers and pupils cannot do their jobs properly, and without the ability for the helping professions to show parents how behavior can be effectively controlled, their professions will fall into disrepute. After all, what is the use of developing any screening instruments which can not only show which children are evincing maladaptive behaviors but also can predict which children will be showing maladaptive behaviors three years hence, if nothing is going to be done for such children.

Summary of Recommendations

1 - It seems possible to screen out children who are failing to adapt, but, inspite of favorable reliability and validity, the Bower instruments would not seem to be the instruments to best do it. It is possible that some reworking of A Behavior Rating of Pupils and A Class Play might produce an effective screen but certainly not in their present form. Thinking About Yourself would seem not to have any practical use at all.

2 - Rather than such instruments, what is needed is a diagnostic technique which not only indicates whether or not a child's behavior is maladaptive, but also indicates which behaviors are a source of concern and need to be altered. A frequency counting technique, in which behavior is observed for periods of time, broken into sub-units or cells, is called for.

3 - Educational intervention should be based not only in helping a child with school work but on eliminating concrete observable behavior of immediate concern.

4 - A breakdown of skills and experiences necessary to function in the classroom is needed. These should be operationalized and then taught.

5 - New teacher and counselling education courses are required. Such programs should teach the recognition of behavior, how to analyze it, how to change behavior, and how to help children cope with feelings - particularly the establishment of expectations and relationships.

6 - The miniaturization of adult counselling services for children would seen to be a waste of time with children who are having difficulty adapting, other than in those cases in which the problems are minor. The whole concept of school counselling would seem to be in need of a serious revision.

7 - For classification to be revelant to the clinical situation, and for such classification to have some predictive value, it must be based on observable behavioral signs, not upon concepts. It should be maladaptive behavior which is classified, not children.

Epilogue

It would seem that a healthy alternative to traditional diagnostic methods for identifying maladaptive children can be provided by a Social Competance Model. One which emphasizes effective functioning in school as a measure of a child's ability to ultimately function in society. It has been stressed that the main treatment emphasis should be on helping the child to acquire necessary social and occupational skills; Dr. McCleish has wisely suggested that the level of behavioral adjustment shown by the children may be more related to immediate causes such as the individual's current level of skill development. Certainly the control group had a much lower 'mental age' than the experimental. Were their social skills more related to M.A. than C.A.?

Learning theory can show why a maladaptive child does not automatically learn adaptive behavior. Much of the child's behavior may be understood as avoiding that which, as a result of past learning experience, carries with it (for him) painful reactions. He repeats the avoidant behavior patterns which keep him out away from the situations or experiences which could be helpful to him. The Social Competence Model therefore becomes primarily a process of leading the child into new situations and experiences and controlling as much as possible such experiences so that the probability of positive reinforcement (or gratification) is increased.

With such a model, maladaptive behavior patterns are considered largely as those which temporarily reduce anxiety but which do nothing about changing the conditions that have produced the anxiety. The main reason such patterns tend to be self-defeating is that they offer the means of immediate anxiety reduction. The maladaptive child, confused by his anxiety, is not able to achieve the perspective necessary to see beyond his emotionally confused state. He keeps doing the things that bring short-term reduction of his anxieties, even though he is not benefitting in the long term. This is the principle of the 'gradient of reinforcement', which hypothesises that the consequence of actions that lie closest in time to their performance will have the greatest effect (Harper, 1959). The Social Competence Model seeks to break up such perpetuating, self-defeating procedures and help the child find new patterns which are reinforcing.

Probably more than any other group of therapists, learning theory proponents have rested their contentions on inferences about human behavior that derive from scientific studies. As a group therefore, they tend to be more cautious, less inclined toward broad claims or sweeping generalizations. They point consistently to the need for further study, to the incompleteness of learning hypotheses, to the tentative application of existing hypotheses to human behavior ... but they do hold that the behavior, of greatest interest to a study such as this one, is learned. Since it is learned it must be learned in accordance with principles of learning, known or unknown, and not by any special mystical process. If it is learned can more adaptive behavior be subsequently learned? It would seem that whatever allegiance one has, in general terms, the answer must be 'yes'.

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APPENDICES

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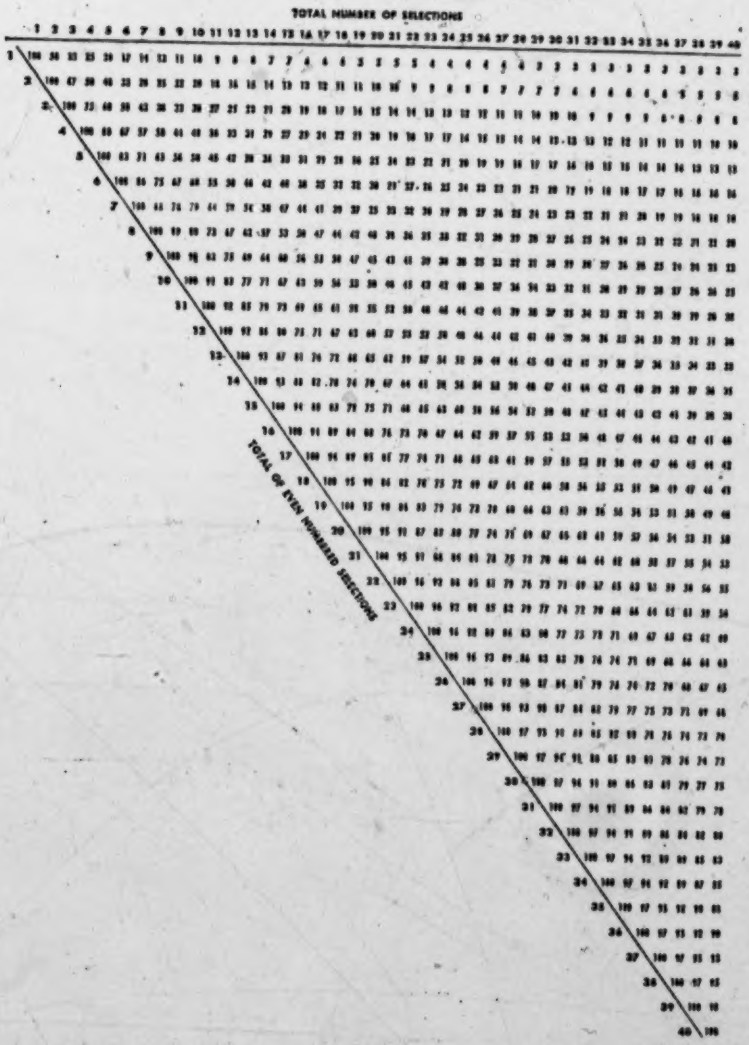
APPENDIX D

Computation of Percentage for Peer Ratings


TOTAL NUMBER OF SELECTIONS
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40
TOTAL OF EVEN NUMBERED SELECTIONS
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

APPENDIX E

PARENT INTERVIEW FORM

District______________________ Date__________________

I. IDENTIFYING INFORMATION

Child's Full Name____

Father's name____

Mother's name____

Address____

Phone____________________ Date of Birth______________________
(year/month/day)

Age_______________ Sex________

Is the child adopted?_____ If so at what age?______________

Is this a foster child?_______ If so , since what age?____

School/Kindergarten/Playschool__________________Grade________

Address__________________________________ Phone_______________

Child referred by____

What other agencies have seen this child, and when?_________

____

II. DESCRIPTION OF THE PROBLEM

What led this child to be referred.

III. EDUCATIONAL HISTORY

Has the child been retained in a grade?______________________

Which one?_________ Why?____________________________________

____

Specific areas of difficulty______________________________

Specific areas of strength________________________________

What special help has he had?_____________________________

____

How do parents feel about current school programming?______

____

____

Additional comments:

IV. FAMILY HISTORY

Parents:	Mother	Father
Birthdate		
Occupation		
Marital status		
Physical disabilities		
Educational level		
Educational difficulty		
Handedness		

Siblings:

Name			
Birthdate			
Sex			
Grade			
Physical disabilities			
Educational difficulty			
Handedness			

Language(s) spoken in the home____________________________

Religious affiliation____________________________

Other persons residing in the home____________________________

Have any of the following occurred in this family's background? (Explain)

Mental illness____________________________

Mental retardation____________________________

Epilepsy____________________________

Alcoholism____________________________

Other____________________________

Family problems that might contribute to the child's difficulties - (Explain) e.g., death, divorce, frequent moves, etc.

How often is either parent away from the family?

V. CHILD'S HEALTH HISTORY

Illnesses: Age Describe-severity, etc. Fever(duration)

Measles ________________

Chicken pox ________________

Mumps ________________

Scarlet fever ________________

Croup ________________

Tonsillitis ________________

Bronchitis ________________

Whooping cough ________________

Ear infections ________________

Pneumonia ________________

Colds ________________

Allergies ________________

Tuberculosis ________________

Polio ________________

Encephalitis ________________

Convulsions ________________

Other ________________

Surgery - ________________

Accidents - ________________

Hospitaliz. ________________

Behavior change following any of the above? (Explain) ________________

____

____

Reaction to inoculation (Explain) ______________________

____

VI. RECENT EXAMINATIONS

	Date	Location
Speech		
Hearing		
Physical		
Neurological		
Ophthalmological		
Psychological		
Other		

VII. BIRTH HISTORY

Miscarriages (Date & circumstances) ______________

______________________________ ____________

Stillbirths or death in infancy (As above) ____________

____

Conditions during pregnancy

Bleeding ______________________________________

Nausea _______________________________________

Illness, accidents ______ ________________________

Infection _____________________________________

Other (inclu. RH incompat.) _______________________

____

Duration of pregnancy ____________________________

Did other pregnancies differ from this one? (Explain) _____

____

____

Conditions during labor:

False labor? How long before delivery?__________

If induced, how?__________

Interrupted?__________ Length?__________

Complications?__________

____

Anesthesia__________

____

Conditions during delivery:

Placentia previa?__________ Breech?__________

Forceps?__________ Caesarian?__________

Normal?__________

Complications:__________

____

Conditions of child at birth:

Color__________ Jaundice?__________

Breathe immediately?__________

Transfusions, etc.__________

Incubation__________

Birth weight______________________________

Other:___________________________________

____

____

VIII. INFANCY AND EARLY CHILDHOOD

What were family conditions during pregnancy and birth?

(Economic, personal, etc.)______________________

____

Early Infancy:

Difficulty in sucking or swallowing?______________

Severe diarrhea?____________________________

Dietary restrictions?_________________________

Breast (duration)____________Bottle (duration)______

Toilet trained (what age?)_____________________

Was baby affectionate, responsive?________________

____

Cuddly?___________________________________

Early Childhood:

Age when he sat_____________________________

Age when he walked___________________________

First words at what age?__________Sentences_________

Unusual characteristics of early development that worried parents?_________________________________

____

Was the child very active - or - very quiet?___________

IX. PRESENT DEVELOPMENTAL STATUS

Motor:fine/gross:

Fine motor coordination ______________________

Gross motor coordination ______________________

Balance (awkward, adequate, etc.) ______________________

____

Orientation difficulties? ______________________

Handedness ______________________

Language:

Describe present language ______________________

Clarity of speech ______________________

Sounds presenting difficulty ______________________

Vocabulary - adequacy ______________________

Syntax - adequacy ______________________

Dysnomia? (Circumlocutions, etc.) ______________________

Formation difficulties? ______________________

Mispronunciations? ______________________

Ability to relate events ______________________

Rambling? (Loss of main idea) ______________________

Difficulty with tenses, etc.? ______________________

Memory:

Long-term ______________________

Short-term ______________________

Undependable? ______________________

General behavior:

Can he tell time?______________________________

Judgment re: danger?____________________________

Is he dependable at home?________________________

Household responsibilities?_______________________

Relationship with siblings________________________

____

__________Father____________________________

_______________Mother________________________

____

Relationship with peers__________________________

____

Describe sleeping habits_________________________

____

Describe eating habits___________________________

____

Does he comprehend the sequence of calander events?________

____

Additional comments:

X. EMOTIONAL ADJUSTMENT

General: responses to environment

Responsive to people?______________________________

Primarily responsive to objects______________________

Playful with pets_________________________________

Highly distractible, hyperactive_____________________

Behaviorally consistent from day to day_______________

Oblivious, withdrawn_______________________________

Easily managed in the home___________________________

Additional comments:

Emotional expression

Cry, sob, shed tears?______________________________

Laugh, smile, seem happy?___________________________

Have any excessive fears or phobias?___________________

____

Additional comments:

Family and peer relations

How is he disciplined?______________________________

Reaction to discipline?____________________________

Accepted by peers?________________________________

Is the child a follower or leader?____________________

Is he often teased and what is his reaction to it?_________

____

Are his friends his age, older, or younger?________________

____

Describe relationship between child and siblings__________
" " " " " father____________
" " " " " mother____________

Where does the child sleep? Does he share a room?_________

____

Describe the child's sleeping habits______________________

____

Who takes care of the child in the mother'sabsence?________

____

Does the child show concern when separated from the parents?

____

____

Self perception

How does the child value himself?_________________________

____

How does he deal with it?________________________________

____

Are there specific things which make him angry or afraid?

____

How does he deal with them?______________________________

____

Does he enjoy jokes, cartoons, humerous situations?________

____

Would you describe him as having difficulty with right and wrong, poor reality concept, behaviorally inconsistent, distractible, hyperactive, fearful, nervous, worries, easily upset, sleeping and/or eating difficulty, enuretic, bites nails, sucks thumb, accident prone, frequently ill, dependent, immature, poor self esteem, depressed, unhappy, irritable, destructive, fights easily, hard to discipline, has tantrums, cheeky, few friends, lazy, badly organized, difficulty with police/neighbours/teachers, clumsy, awkward (underline and describe)__________________________

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Additional Comments: